Editor's note; 101 I.D. 123

UNITED STATES

v.

RICH KNOBLOCK ET AL.

IBLA 90-249 Decided October 18, 1994

Appeal from a decision of Administrative Law Judge Ramon M. Child dismissing a contest complaint against 11 placer mining claims. I-25389.

Appeal reviewed de novo; decision below reversed.

1. Mining Claims: Contests--Mining Claims: Determination of Validity--Mining Claims: Discovery: Generally--Res Judicata

   Unless and until patent issues, paramount title to lands embraced by mining claims remains in the United States, and it may inquire into the extent and validity of rights claimed against it. The doctrine of res judicata has no application to a mining claim contest where the previous determinations upon which invocation of the doctrine is premised did not purport to either determine the existence of a valuable mineral deposit or otherwise adjudicate the validity of the mining claims in question.

2. Mining Claims: Determination of Validity--Mining Claims: Discovery: Marketability

   A discovery within the meaning of the mining laws exists where the evidence is such that a person of ordinary prudence would be justified in the further expenditure

of labor and means, with a reasonable prospect of success in developing a paying mine. Determining that a prudent individual would be justified in attempting to develop a paying mine necessarily involves consideration of whether or not a mineral deposit has been exposed within the limits of a claim and, if so, whether the evidence is such that an individual would be justified in concluding that the exposed mineral exists in sufficient quantity and quality so as to make expectations of its profitable extraction reasonable under the facts of record.

3. Mining Claims: Determination of Validity--Mining Claims: Discovery: Generally

There is a clear distinction between the quantum of evidence which would be sufficient to justify a prudent individual in the continuation of an active search for a mineral deposit of sufficient quantity and value to warrant development and that evidence which is, itself, adequate to justify the commencement of actual development of a productive mine with a reasonable prospect of success. Only the latter showing is sufficient to warrant a finding that a discovery under the mining laws exists.

4. Administrative Procedure: Burden of Proof--Rules of Practice: Government Contests

The determination of whether or not the Government has presented a prima facie case of invalidity in the contest of a mining claim is made solely on the basis of the evidence introduced in the Government's case-in-chief, which includes testimony elicited in cross-examination. If, upon the completion of the Government's presentation, the evidence is such that, were it to remain unrebutted, a finding of invalidity would properly issue, a prima facie case has been presented and the burden devolves on the claimant to overcome this showing by a preponderance of the evidence.

5. Administrative Procedure: Burden of Proof--Rules of Practice: Government Contests

Since it may generally be assumed that, given the varying economic conditions present over a period of years, a mining claim will usually be developed unless it is not commercially feasible to profitably do so, a Government showing that there has been an absence of production from a mining claim for an extended period of time is sufficient, without more, to establish a prima facie case of invalidity.

6. Mining Claims: Discovery: Geologic Inference

While recourse to geologic inference to show the continuation of values beyond the area of a physical exposure of a mineral deposit may be made upon a showing that the demonstrated values have been relatively consistent and are likely to continue given the geologic nature of the deposition, geologic inference alone will be deemed insufficient to project high values into areas containing exposures which, themselves, fail to exhibit similar high values.

7. Mining Claims: Determination of Validity--Mining Claims: Discovery: Marketability

Where the evidence submitted with respect to certain claims indicates the lack of any exposure of a mineral deposit on some of the claims and that, while an exposure of mineral deposit might be deemed to exist on the other claims, the values disclosed are insufficient to establish that the mineral deposit is valuable within the meaning of the mining laws, the claims are properly deemed to be null and void as lacking a discovery of a valuable mineral deposit.

8. Mining Claims: Determination of Validity--Mining Claims: Discovery: Marketability

The fact that a market existed for euxenite in the 1950's does not preclude a finding that no market existed for euxenite in 1972, where it can be shown that the earlier production of euxenite was pursuant to a Government contract which paid for the contained columbium/tantalum pentoxides at rates far in excess of the existing market price, that all production of euxenite ceased upon completion of the Government contract and the termination of its stockpiling program, and that there has been no market for euxenite since 1959.

9. Mining Claims: Determination of Validity--Mining Claims: Discovery: Generally

The standard for determining whether a discovery of a valuable mineral deposit has been made is not whether expenditures for further exploration or for further analysis might be justified. Rather, a finding of discovery requires that the evidence be sufficient to justify, as a present matter, the expenditures necessary to develop a paying mine with a reasonable prospect of success.

APPEARANCES: Erol R. Benson, Esq., Office of the General Counsel, United States Department of Agriculture, Ogden, Utah, for the United States Forest Service; Richard K. Linville, Esq., Emmett, Idaho, for appellees.

OPINION BY ADMINISTRATIVE JUDGE BURSKI

The United States Forest Service (Forest Service), United States Department of Agriculture, has appealed from a decision of Administrative Law Judge Ramon M. Child, dated February 12, 1990, dismissing a contest complaint against the Goat Creek No. 1, Baron Creek Nos. 1 and 2, and Good Luck Nos. 1, 2, 3, 4, 5, 000, 00, and 0 placer mining claims. The subject group of claims, collectively referred to as the Payette placer claims, were located in 1957 and 1958 and are situated in unsurveyed secs. 1 and 12, T. 8 N., R. 11 E., secs. 6 and 7, T. 8 N., R. 12 E., secs. 2, 3, 10, 11, 13, 14, 22, 23, 26, 35, and 36, T. 9 N., R. 11 E., and secs. 34 and 35, T. 10 N., R. 11 E., Boise Meridian, Boise County, Idaho, along the South Fork Payette River. Subject to valid existing rights, all of these lands were withdrawn from location or disposition under the mining laws by the Sawtooth National Recreation Area (SNRA) Act, 16 U.S.C. §§ 460aa, 460aa-9 (1988), effective August 22, 1972, as well as by the Wilderness Act of 1964, 16 U.S.C. § 1133 (1988), effective January 1, 1984.

The instant controversy was initiated on April 14, 1988, by the filing of a contest complaint by the Bureau of Land Management (BLM), on behalf of the Forest Service, seeking a declaration of invalidity with respect to the subject claims. The complaint, which was served upon, inter

alia, Rich Knoblock and Nampa Christian Schools Foundation, Inc., appellees herein, alleged that minerals had not been found within the limits of any of the mining claims of sufficient quantity and quality as to constitute a discovery of a valuable mineral deposit, within the meaning of the mining laws, either at the present time or as of August 22, 1972, the date the land was withdrawn from mineral entry by the SNRA Act. The named contestees duly denied these charges.

Additionally, contestees affirmatively asserted that, pursuant to the terms of a Departmental decision and order styled United States v. Davis, dated May 12, 1958, as amended, January 20, 1959, the subject claims were "allowed and validated, and the Contestant is estopped to contest the validity of said claims and the right of Contestees to proceed with development of the claims." Contestees stated that the Government was further estopped from interfering with their prospecting and operation of the claims in conformance with a logical and sequential operating plan as specifically allowed by the United States District Court for the District of Idaho in United States v. Knoblock, Civ. No. 77-1127 (D. Idaho, Aug. 3, 1979).

A 2-day hearing was held in Boise, Idaho, on October 16 and 17, 1989, before Judge Child. The Government commenced its case-in-chief by calling Rich Knoblock, co-owner of the claims, as an adverse witness (Tr. 13). Knoblock testified that he had acquired the claims in 1963, but had not produced any minerals from the claims (Tr. 15). Knoblock asserted that he lacked sufficient financial resources to personally mine the property and had tried to sell it (Tr. 16, 19, 26). The most recent sales agreement had

been with David Sim, who terminated the agreement in a letter to Knoblock asserting that an examination had failed to disclose a verifiable mineral discovery which would provide minerals in sufficient quality and quantity to develop a paying mine (Tr. 24-25).

Following testimony from Daniel Vern Shrum, Supervisory Forestry Technician with the SNRA, establishing that the claims were located within the SNRA and, in whole or in part, within the Sawtooth Wilderness Area (Exh. G-5; Tr. 40), the main portion of the Government's case was presented by James Jeff Jones (Jeff Jones), a mineral examiner for the Forest Service. Jeff Jones testified that, prior to an examination of the claims, he had reviewed Geological Survey Bulletin 1319-D, "Mineral Resources of the Sawtooth Primitive Area," published in 1970, which contained a section on the Payette placer claims and which reported the results of various churn drill holes. He also consulted a 1957 report by E. S. Rugg of Goldfield Consolidated Mines Company (Tr. 49).

Jeff Jones conducted his examination of the claims on September 28, 29, and 30, 1983, and subsequently prepared a report of his examination. See Exh. G-7. Accompanying Jeff Jones on his initial visit were Jeffrey Gabardi, Forest Service mining engineer from the Boise, Idaho, office, David Sim, who then held an option on the claims, Gene Stonehocker, a consulting geologist, and Sim's sampling crew of five men. Knoblock was present for part of the examination (Tr. 51-52). Because the land had been withdrawn in 1972, the examination was particularly directed to ascertaining whether a discovery had existed prior to the withdrawal, based on the excavations made and sampling undertaken at that time.

Sim and Stonehocker chose all sites for sampling (Tr. 54). For the sampling process, Sim and Stonehocker would identify a sample site and direct their backhoe operator to dig a hole. Jeff Jones would go down in the hole, take a sample down the wall of the hole, bag the sample, identify it with a sample log, photograph the sample site, and identify the spot on the map or air photograph (Tr. 57). He took a total of 16 samples, at least one of which was located within each claim. Six of the samples were vertical channels taken down the walls of backhoe pits. It was necessary to take the remaining 10 samples as random samples from the gravel piles of the backhoe pits because these pits had rapidly filled with water (Tr. 59-67). The samples were tagged for identification and taken to the Forest Service warehouse, where they were put through a sluice box and then hand-panned to obtain a black sand concentrate. These concentrates were sent to the Reno Research Center, U.S. Bureau of Mines, for assaying (Tr. 67).

Although Jeff Jones had instructed the lab to determine the gold values by amalgamation, the lab failed to do so (Tr. 68). 1/ Having consulted with a number of people, he decided to send the remaining sample (which consisted of 98.54 percent of the original sample) to Metallurgical Laboratories Inc. (Metlabs) in San Francisco whose chief assayer recommended a complete fire assay (Tr. 72). Unfortunately, the lab combined all 16 samples into a single sample, so that the amount reported was total gold from all of the

1/ In addition to determining the amount of gold by amalgamation, the lab was instructed to assay for platinum, palladium, niobium (columbium), tantalum, rare earth oxides (and, if possible, to determine the presence of individual rare earths), yttrium, tin, tungsten, thorium, and U_3O_8 uranium (Tr. 68). The assay report is found at page 20 of the appendix to Exh. G-7.

sample sites (Tr. 74). Jeff Jones ultimately decided to add this value to the sample showing the greatest value for other minerals. See Exh. G-9.

Based on the assay reports, Jeff Jones proceeded to determine the respective values of the samples which he had taken. To do so, however, he made a number of assumptions as a predicate for determining value. Initially, he noted that it had not been possible to determine the percentage of monazite, euxenite, columbite, and ilmenorutile because of the very low concentrations in the samples. 2/ This was important since, in 1972, there was no market for either euxenite or ilmenorutile. In assigning values for various minerals, therefore, he assumed: (1) that all columbium 3/ was present as columbite, even though he suggested that 47 percent of the columbium would not be in the form of columbite (see Exh. G-7 at 10; Tr. 86); (2) that all tantalum was present as columbite 4/ (see Exh. G-7 at 11); (3) that all of the uranium was extractable, even though there was no indication that uranium was present in any form other than euxenite

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2/ Rugg, in his analysis, had obtained an assay which showed euxenite at 2.6 percent, ilmenorutile at 3.4 percent, columbite at 1.9 percent, and monazite at 0.8 percent. See Rugg Report at 5.

3/ Columbium (Cb) is the name used by the metallurgical industry for the chemical element with atomic number 41 and an atomic weight 92.91. However, this element is referred to as niobium (Nb) in chemistry and most other sciences. See United States Mineral Resources, "Niobium (Columbium) and Tantalum," R. Parker and J. Adams, U.S. Geological Survey Professional Paper 820 (1973) at 443 n.1. While individuals testifying at the hearing generally referred to the element as columbium and reported values for columbium pentoxide (Cb_2O_5), there were references to both niobium and niobium pentoxide (Nb_2O_5). These designations will, therefore, be used interchangeably.

4/ Jeff Jones further testified that, while he had assigned values to his samples for tantalum ranging from $0.001 to $0.021, none of the tantalum would have been marketable since the tantalum-columbium ratio was too low (Tr. 87).

(see Exh. G-7 at 12); and (4) that all of the rare earths, yttrium, and thorium 5/ were present as monazite (see Exh. G-7 at 13).

Based on the foregoing assumptions, Jeff Jones computed values for each of his samples based on 1972 prices. These ranged from a low of $0.008 per cubic yard for sample No. 2044 to a high of $0.091 per cubic yard for sample No. 2042. See Exh. G-7 at 15. He then added the gold value as derived from the inductively coupled plasma analysis (0.333 troy ounces per ton for sample No. 2042), to arrive at a total value of $0.013 per cubic yard for that sample, which was the highest value derived for any of his samples. Subsequently, having obtained the fire assay of total gold from Metlabs, he added an additional gold and palladium 6/ value of $0.025 per cubic yard to sample No. 2042, arriving at a total value of $0.155 per cubic yard for that sample. 7/ See Exh. G-9.

Jeff Jones also computed the values disclosed in the churn drill holes as reported in Geological Survey Bulletin 1319-D. Twelve of these holes (Nos. 1 to 12) had been drilled by Rare Metals Corporation of America in

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5/ The rare earth elements, which are also called lanthanides, consist of a group of 15 chemically similar elements with atomic numbers 57 through 71, inclusive. Yttrium, although not a lanthanide, is normally grouped with the rare earth elements since it often occurs with them in nature, having similar chemical properties. See Mineral Facts and Problems, 1985, "Rare-Earth Elements and Yttrium," J. Hedrick, Bureau of Mines Bulletin 675 at 647. Thorium is recovered as a byproduct of processing monazite for the lanthanides and yttrium. See Mineral Facts and Problems, 1985, "Thorium," J. Hedrick, Bureau of Mines Bulletin 675 at 842.

6/ The total palladium value was computed as $0.0008 per cubic yard. Thus, virtually all the additional value represented values derived from gold.

7/ It is unclear whether this, in effect, double-counted the gold, since the sample value to which $0.025 was added already included a gold value determined from the inductively coupled plasma analysis.

1958, two more (Nos. 13 and 15 8/) were drilled either in 1964 or 1965 by the claimants, and the last two (Nos. 16 and 17) were drilled by the claimants in 1967. In making his computations, Jeff Jones assumed that all of the Nb_2O_5 shown on the assays was present as columbite and that all of the uranium was recoverable. The combined columbium and uranium values for the 16 churn holes ranged from a low of $0.006 per cubic yard for churn hole No. 11, to a high of $0.293 per cubic yard for churn hole No. 15. Since assays for gold values had been made for churn holes Nos. 13 and 15, he added the gold values to the columbium and uranium totals for those two holes. The total cubic yard value for holes Nos. 13 and 15 was $0.216 and $0.341, respectively. 9/ By way of contrast, the highest value for any of the other churn holes was $0.099 for hole No. 17, though, admittedly, none of the samples from the other holes had been assayed for gold and some had not been assayed for uranium. See Exh. G-7 at 17.

In calculating the anticipated costs of mining, Jeff Jones anticipated that mining would occur utilizing a large bucket line dredge that could dig 110 feet, a method which, he asserted, would be the cheapest given the nature of the deposit (Tr. 79-81). Jones took information available through the Bureau of Mines on the mining costs and capital costs associated with the dredge and adjusted it to reflect 1972 costs. The capital cost figure which he derived was $11,891,250, based on 1967 capital costs of $7,875,000

8/ Churn drill hole No. 14 was abandoned at a shallow depth because of a surface boulder.
9/ Subsequently, however, Jeff Jones noted that if the gross-weighted average value of the unmarketable columbium (that found in ilmenorutile and euxenite) was subtracted from the results for churn hole No. 15, the value would decline to $0.221 per cubic yard (Exh. G-7 at 21).

for a comparable dredge. Noting that the best values had been obtained in churn hole No. 15, which was located on the Good Luck No. 4, he computed the total cubic yardage on that claim (37,592,593) and determined that each cubic yard would have to bear $0.3163 merely to amortize capital costs. See Exh. G-7 at 20. To this figure, he added direct operating costs of $0.1027 per cubic yard, for a total cost of $0.419 per cubic yard, which would merely account for direct and capital costs of mining. 10/ His report noted that this cost exceeded the value of the deposit by nearly $0.08 per cubic yard even before any milling and transportation costs were added. Milling costs alone he estimated to be $0.127 per cubic yard. Based on this analysis, he concluded that the deposit could not have been marketed at a profit in 1972 and was not, therefore, supported by a discovery as of the critical date (Tr. 87).

Under cross-examination, Jeff Jones was questioned concerning two prior analyses of the claims, one prepared in 1978 for the SNRA by Russell Wood, a professional engineer, and the other prepared in 1980 by Guy V. Jones, who was then employed as a mining geologist by the SNRA. See Exhs. C-4 and C-1. 11/ Insofar as the Wood report was concerned, Jeff Jones noted that he had read the report prior to writing his own analysis. He recognized that

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10/ Jeff Jones also noted that other costs such as general overhead, interest on capital investment, development drilling, development work such as surface stripping, reclamation, and the capital costs which would be incurred to modify the dredge so it could dig to 145 feet, were not included in this figure (Tr. 81). See Exh. G-7 at 20-21.

11/ Jeff Jones was also questioned about a report apparently prepared by Kershner and Mashburn, premised on the use of a suction dredge, which, according to Jeff Jones, would not be practical considering the large boulders on the claims. While this report was marked as Exh. C-3 (see Tr. 98), only the drilling records of the report were ultimately admitted into evidence. See Tr. 153.

the Wood report's estimate of value was significantly higher than his, but he attributed this to the fact that the report did not use the 1972 values for gold, Cb_2O_5, tantalum pentoxide (Ta_2O_5), and uranium U_3O_8. 12/

Jeff Jones was questioned extensively concerning the differences between the conclusions reached in his report and those appearing in the Guy Jones report. 13/ The Guy Jones report had concluded that the "best placer ground" on the claims would contain 88 million cubic yards of dredgible material with an average value of $0.342 per cubic yard. 14/ Total costs were estimated to be $0.2201 per cubic yard, and the net value of production was estimated at $10,753,758. Additionally, the report noted that "[i]f methods were available in 1972 to extract the Cb_2O_5 values contained in the ilmenorutile, the profit margin could go up by 11¢/yd^3 or $9,700,625 less reduction costs" (Exh. C-1 at 11).

12/ Another difference lay in the fact that Wood had ascribed significant thorium values to drill holes Nos. 13 and 15 (and a lesser thorium value to drill hole No. 16), whereas Jeff Jones had excluded any thorium values in his calculations.

13/ The Guy Jones report actually consists of two separate documents, one designated the "SNRA Position Document on the South Fork Payette Placer Claims," which is two pages long, and another far more extensive analysis entitled "Evaluation of the South Fork Payette River Placer Deposit." Both documents are found in Exhibit C-1. While the first document draws on conclusions developed in the second document, it is the second document which contains virtually all of Guy Jones' substantive appraisal. References in the text to the "Guy Jones report" will be to this latter analysis unless otherwise expressly noted.

14/ While the weighted average value was originally determined to be $0.354 per cubic yard (see Exh. C-1 at 10), Guy Jones subsequently calculated that transportation costs for the ilmenite would aggregate $5,349,498, far in excess of its value. Accordingly, the value which he had originally attributed to the ilmenite ($0.012 per cubic yard) was subtracted. See Exh. C-1 at 11; Tr. 243.

In explaining the differences between his analysis and that contained in the Guy Jones report, Jeff Jones noted that the Guy Jones report both included values for minerals which he had not included in his computations and assumed costs (particularly capital costs for the dredge) significantly lower than those utilized in his analysis.

Thus, Jeff Jones pointed out that, while the Guy Jones report had allocated a value of $0.036 per cubic yard for platinum, he had accorded no value to platinum. Jeff Jones noted that his own assays had failed to detect any platinum. While admitting that platinum values had been reported in Geological Survey Bulletin 1319-D with respect to churn holes Nos. 13 and 15, Jeff Jones pointed out that the Bulletin had also noted that "[a]ssays on several samples by the Bureau of Mines and Geological Survey laboratories did not find detectable quantities of platinum" (Exh. G-7, App. at 56). Accordingly, he did not feel that the presence of platinum in the deposit had been established.

Other differences between Jeff Jones' analysis and the Guy Jones report occurred in the treatment of yttrium and thorium. The Guy Jones report had indicated that some of the yttrium was present in euxenite. Jeff Jones assumed that all of the yttrium was in the form of monazite which, given the fact that he also believed there was no market for euxenite, was an assumption which favored the claimants. Arguing that no additional price is paid for the yttrium content of monazite, Jeff Jones merely computed the market value of the monazite. Moreover, noting that large surplus stocks of yttrium existed, he concluded that there was no demand for the yttrium oxide

present, regardless of whether or not it was in the form of monazite or euxenite. See Exh. G-7 at 19. Jeff Jones similarly concluded that there was no market for thorium from the claim, pointing out that "[t]here are large industry and government stocks of ThO_2 as a result of monazite processing." Accordingly, he ascribed no value for thorium content. Id.

The Guy Jones report, on the other hand, took the opposite approach with respect to yttrium and, rather than valuing the monazite at its going rate ($0.085 per pound) utilized a figure which represented the value of the contained yttrium at $9.00 a pound. This had the effect of increasing the ascribed value for the monazite from $0.01 per cubic yard to $0.06 per cubic yard. The yttrium content of the euxenite was similarly valued resulting in an additional $0.001. Thus, the Guy Jones report assumed that all of the yttrium would be recovered. Insofar as the thorium was concerned, apparently recognizing that thorium oxide was, indeed, in oversupply, the Guy Jones report assumed that only 20 percent of the thorium would be marketable with a net value of $0.014 per cubic yard. See Exh. C-1 at 10. Elimination of the values attributed to platinum, yttrium, and thorium in the Guy Jones report results in a weighted value per cubic yard of $0.253 for churn holes Nos. 13 and 15, which is actually below the average value per cubic yard which Jeff Jones developed in his analysis of these two drill holes ($0.277 per cubic yard). Of course, this latter figure assumed 100-percent recovery of Cb_2O_5.

The differences in valuation of the deposit were relatively minor compared to the variance in presumed development costs. This divergence

was the result of two separate factors: (1) the cost of a dredge and the associated costs of transporting it to the site and assembling it; and (2) the amount of reserves over which this cost would be apportioned. The Guy Jones report assumed total dredge costs of $2,195,600 which would be spread out over 88,187,500 cubic yards of material. See Exh. C-1 at 10. Jeff Jones, in his report, assumed that the dredge would cost $11,891,250 spread over 37,592,593 cubic yards. See Exh. C-7 at 20. Thus, the Guy Jones report projected capital costs aggregating $0.0249 per cubic yard while, under Jeff Jones' analysis, capital costs would be $0.3163 per cubic yard.

Jeff Jones noted that he had derived his estimate of the costs of a dredge from a 1967 Bureau of Mines report on dredging (Information Circular 8462) which he upgraded to 1972 based on commodity price data also obtained from the Bureau of Mines (Tr. 104-06). See also Exh. G-7 at 20. He admitted that the dredge which he referenced was the largest available dredge at that time, but justified its use on the theory that its increased capacity might make it more economic than using a smaller dredge. See also Tr. 180. He recognized, however, that a different approach might also be justified. Thus, the following exchange occurred between Jeff Jones and claimants' attorney:

> Q. [BY MR. LINVILLE] I think we were talking about the cost of dredges Mr. Jones. Is it -- would it be possible to dredge, particularly on a selective basis, in the Payette River Placer Claims using a smaller dredge than the one that you utilized in your cost calculations?
>
> A. Yes.

Q. Would it be prudent for a miner to go out and buy the biggest dredge in the world to dredge this area on a selective basis?

A. Yes.

Q. Might it be equally prudent to do more testing and dredge on a more selective basis with a smaller dredge?

A. It might be more prudent.

Q. So the cost figures regarding cost of the dredge, it could be prudent to use a dredge that would have cost, at that time, perhaps what Mr. Jones indicated in his report, two million rather than eleven million?

A. Perhaps.

Q. A cost saving of nine million dollars; is that correct?

A. That's correct.

(Tr. 109).

The yardage calculation which Jeff Jones used was based on the fact that the hole which had showed the highest values (churn hole No. 15) had been drilled to a depth of 145 feet and he arrived at his estimate of yardage by multiplying the length and width of that claim, the Good Luck No. 4, by that depth and then dividing by 27 to obtain the cubic yardage on the claim (Tr. 170). The Guy Jones report had used all of the Good Luck No. 3 and portions of the Good Luck Nos. 2 and 4 in determining the surface acreage and had used a depth figure of 170 feet in arriving at its estimate of 88,000,000+ cubic yards.

Subsequently, on redirect examination, Jeff Jones noted that he had recomputed his cost analysis utilizing the estimate of $2,195,600 for the

cost of a dredge found in the Guy Jones report. Employing his estimate of 37,592,593 cubic yards of material, this would result in capital costs of approximately $0.06 per cubic yard. 15/ He argued that, even utilizing this figure, the cost of mining would still exceed the anticipated return since only 53 percent of the columbium was recoverable because there was no market for either euxenite or ilmenorutile (Tr. 177-78). 16/ He later noted that even if he utilized that yardage figure presented in the Guy Jones report, the result would still be that the deposit could not be economically mined (Tr. 187-90). He further explained that he did not believe the Guy Jones report was justified in its acreage assumptions since much of the acreage was on claims which, according to assays, contained low values (Tr. 194). 17/

Jeff Jones also briefly discussed the history of the Bear Valley deposit which had been mined for euxenite by Porter Brothers in the mid

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15/ Actually, the capital costs per cubic yard would be $0.058 under the assumptions made in the text.

16/ In his report, Jeff Jones had aggregated the capital costs of the dredge ($0.3163 per cubic yard), direct mining costs ($0.1027 per cubic yard), and milling costs ($0.127 per cubic yard) to arrive at a cost figure of $0.546 per cubic yard. He noted that even this figure understated actual costs since numerous other expenditures including reclamation and transportation were not included. Lowering the capital costs of the dredge to $0.058 per cubic yard would result in decreasing Jeff Jones' total to $0.288 per cubic yard. While Jeff Jones had originally valued the minerals at $0.340 per cubic yard, he had noted in his report that elimination of the unmarketable columbium would decrease the average weighted value (assuming 100 percent recovery) to $0.221 per cubic yard. Thus, under these figures, mining the deposit would lose $0.068 per cubic yard.

17/ In point of fact, the only drill holes on the Good Luck No. 3 were drill holes Nos. 11 and 12. The weighted average of drill hole No. 11 was under 0.008 pounds Cb_2O_5 per cubic yard, while the weighted average of drill hole No. 12 was 0.092 pounds Cb_2O_5 per cubic yard. In assuming continuity of values between churn holes Nos. 13 and 15, the Guy Jones report essentially discounted drill hole No. 11 and assumed that drill hole No. 12 fairly measured only the nonmagnetic fraction of the hole. See Exh. C-1 at 7-8.

to late 1950's. He noted that this deposit was located approximately 30 miles southwest of the Payette placers (Tr. 182). He explained that Porter Brothers had obtained a Government contract at roughly $3.50 per pound of columbium oxide under which they sold and processed a substantial amount of euxenite which was then shipped to St. Louis for extraction of the Cb_2O_5. Id.; see also Exh. G-7 at 18-20. Upon termination of the Government contract, however, operations at Bear Valley were shut down and have not reopened since that time. In response to an inquiry as to how that deposit compared with the Payette placers, Jeff Jones responded that the Bear Valley deposit was "much better," noting that "euxenite averaged a pound per cubic yard, and the best hole in any of the drilling results here that we're dealing with is two-tenths a pound" (Tr. 183). With the completion of Jeff Jones' testimony, the Government rested.

At this point, contestees presented a number of motions seeking to have the complaint dismissed. Thus, contestees renewed the argument originally presented in their answer that the complaint was barred by the doctrine of res judicata, asserting that the claims in issue had been subject to two previous litigations and that, therefore, the Government should be estopped to challenge the claims' validity at the present time. 18/ Contestees also

18/ As noted earlier in the text, the litigation cited involved both a suit for injunctive relief filed by the Government, styled United States v. Rich Knoblock, Civ. No. 77-1127 (D. Idaho, order issued Aug. 9, 1979), in which the Forest Service obtained a permanent injunction barring the claimants from conducting any mining and mining related activities on the claims without a current operating plan approved by the Secretary of Agriculture and further requiring that all activities be in conformity with such an approved plan (see Exh. C-10), as well as an order permitting placer mining under section 2(b) of the Mining Claims Rights Restoration Act of 1955, 30 U.S.C. § 621(b) (1988), entered by then Hearing Examiner Rampton on May 12, 1958, in United States v. Joe J. Davis, Idaho Mineral Locations Nos. 166 through 173 (see Exhs. C-11 and C-12).

sought to have the complaint dismissed on the basis that, since the Guy Jones report had been generated by the Forest Service, its conclusions that a discovery existed on the Good Luck Nos. 2, 3, and 4 were binding on the Government as to those claims because that document had basically admitted that a discovery existed on them. Finally, with respect to the remaining claims, contestees moved to have the contest dismissed on the ground that the Government had failed to present a prima facie case of invalidity. See generally Tr. 200-206.

Judge Child took the first two motions under advisement, desiring to await any further testimony as well as briefing by the parties. Insofar as the motion to dismiss for failure of the Government to present a prima facie case, he denied it as to all claims other than the Good Luck Nos. 2, 3, and 4, as to which claims he took the motion under advisement. Because of the ultimate relevancy of this question in reviewing Judge Child's decision, we set forth his discussion of the issues, as he perceived them, surrounding claimants' motion to dismiss for failure to present a prima facie case:

> As to the failure to make a prima facie case. I think a prima facie case has been made as to all claims, with exception to 2, 3 and 4, and based upon the evidence that has been presented, I would have to rule between the weight to be given Mr. James Jones' testimony as to 2, 3 and 4 and the weight to be given the testimony on 2, 3 and 4 by Mr. Guy Jones, who I have yet to hear from, and I probably will hear. And if there were no adverse testimony there would be a prima facie case. I'm therefore going to deny that motion because I'm going to have to weigh that testimony.
>
> If it weren't for that adverse report, I would have denied your motion, but I'm going to take it under advisement as to those three claims.

(Tr. at 208-09).

The chief witness for the contestees was Guy Jones. He noted that, in 1980, while employed as a mineral examiner in the Sawtooth National Forest, he had been directed to review all available printed information, write a report on the Payette placers, and draft a position paper based on the conclusions which he reached in the report. His report, together with his proposed position paper, was submitted in August 1980 (Tr. 211-14). The report concluded that, within an area commencing at the Mink Creek Trail crossing and continuing approximately 2.1 miles upstream, 19/ a deposit of 88 million cubic yards of dredgible material existed with an average gross value of $0.342 per cubic yard. The total gross value of this deposit was $30,160,125 which, after subtracting $19,400,367 in capital and operating costs, netted out at $10,753,758. The report noted that "the values recovered from the total black sand concentrate recovered from churn drill holes Nos. 13 and 15 show mineral in sufficient quantity and quality to justify a prudent person to spend time and money in an effort to develop a valuable mine" (Exh. C-1 at 11).

While the $10,753,758 figure had been characterized in the Guy Jones report as the "net value of the products produced," the position paper which Guy Jones subsequently drafted noted that the net value of the deposit was actually "$10,753,758 less the reduction costs for processing euxenite" (Exh. C-1 (emphasis added)). Nevertheless, the position paper also concluded that the discovery requirements had been met with respect to the

19/ The area described in the Guy Jones report included approximately 43 acres of the Good Luck No. 2, all of the Good Luck No. 3, and approximately 136 acres of the Good Luck No. 4.

three claims embracing the described deposit. Id. The position paper also asserted that, until on-the-ground mineral examinations were conducted, it would not be possible to determine which of the other claims, if any, were contestable. Id.

At the hearing, in explaining the basis for his conclusion that a discovery of a valuable mineral deposit had been shown to exist on the Good Luck Nos. 2, 3, and 4, Guy Jones reiterated his reliance on the values recovered from the total black sand concentrate for drill holes Nos. 13 and 15 as fairly representing the value of those three claims. In doing so, he repeated and, in some instances, expanded upon points made in his report and position paper. Thus, he noted that, by their nature, the churn drill holes, which penetrated the deposit up to 166 feet in depth, were more likely to fairly sample the deposit than the limited backhoe sampling conducted by Jeff Jones which could only go down a maximum of 9 feet (Tr. 218-19).

In his report, Guy Jones had discussed the possibility that the samples from drill holes Nos. 13 and 15 might have been salted since they showed significantly higher Cb_2O_5 values than those obtained from the other drill holes. See Exh. C-1 at 6-7. He had discounted this possibility in his report because, based on his calculations, it would have required one-quarter pound of pure euxenite to elevate the Cb_2O_5 levels from that obtained in the other drill holes. This, he suggested, would have been very difficult to accomplish since, given the columbium-uranium ratio of the deposit, it would have required the processing of 7 cubic yards of

gravel and the subsequent extraction of the euxenite from 103 pounds of black sand. Id. He reiterated this conclusion at the hearing (Tr. 220-21).

The Guy Jones report had further justified its reliance on the assay results obtained from drill holes Nos. 13 and 15, which indicated significantly higher levels of columbium than those obtained from the other drill holes, 20/ by noting that, except for certain intervals of drill hole No. 1, only the nonmagnetic portions of the other drill holes were assayed for Cb_2O_5 and Ta_2O_5. Given the fact that ilmenorutile is weakly magnetic, the assay results for these drill holes could be expected to understate the total Cb and Ta content of the samples. 21/ The report, therefore,

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20/ Drill hole No. 15 had assayed at 0.258 pounds of Cb_2O_5 per cubic yard, while drill hole No. 13 had shown 0.156 pounds of Cb_2O_5 per cubic yard. By way of comparison, the other churn drill holes had ranged from 0.008 pounds per cubic yard (drill hole No. 11) to 0.092 pounds per cubic yard (drill hole No. 12). The weighted average of all of the drill holes was 0.0804 pounds of Cb_2O_5 per cubic yard. By way of comparison, the values posited in the Guy Jones report (i.e., the weighted averages of drill holes Nos. 13 and 15) were 0.200 pounds of Cb_2O_5 per cubic yard of material. See Exh. C-1 at 8.

21/ Thus, the Wood report had expressly noted that "[i]t is believed that half of the contained columbium lies in ilmenite and as most ilmenite is magnetic to the hand magnet that part of the columbium was discarded before assay and the actual total sample content should be twice that which is shown for the non-magnetic portion" (Exh. C-4 at 6). Wood went on to note his view that "[t]he statement that columbium is not recoverable from ilmenite is not considered serious because if the presence of enough columbium thusly occurring is proven then the incentive to develop a process is great." Id.

Paradoxically, both Jeff Jones and Guy Jones were in agreement that no method existed for the economic processing of ilmenorutile. Thus, it could be argued that the failure of the other drill holes to account for the Cb and Ta content of ilmenorutile was irrelevant since there was no known process for extracting it. To the extent, however, that one relied on the Rugg Report's analysis of the relative occurrence of mineralization within the deposit (see note 2, supra), application of those results to only the nonmagnetic fraction would result in understating the amount of euxenite and

concluded that it was justified in relying on the assay results for drill holes Nos. 13 and 15 since these were the only assays to test total black sands. Indeed, in his testimony Guy Jones admitted that, in computing the value of the deposit as it existed between drill holes Nos. 13 and 15, he had completely disregarded the assay results from drill holes Nos. 11 and 12, even though they were located on the Good Luck No. 3 mining claim between the other two samples, because of his view that Rare Metals Corporation had done inadequate testing of the deposit. See Tr. 256-57.

Based on various calculations, Guy Jones concluded that the deposit on the claim averaged 0.156 pounds euxenite per cubic yard, a figure which he asserted was 0.026 pounds per cubic yard higher than that contained in the Bear Valley deposit which had been mined between 1956 and 1959. 22/ See Tr. 223; Exh. C-1 at 8. In the absence of any existing market for euxenite, he calculated its value by determining the value of various component elements. Thus, he ascribed a value of $0.086 per cubic yard for the contained Cb_2O_5, $0.06 per cubic yard for the contained U_3O_8, $0.014 per cubic yard

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fn. 21 (continued)
columbite in the deposit. While Guy Jones dealt with the problem by essentially rejecting the results from the other drill holes and relying exclusively on the assay results from drill holes Nos. 13 and 15, it is also possible to account for the exclusion of ilmenorutile from the assaying results of the other holes by assuming that all of the Cb and Ta found in those holes was either in the form of columbite or euxenite.

22/ In this regard, Guy Jones' testimony was in direct conflict with the testimony of Jeff Jones. Thus, while Guy Jones claimed that the amount of euxenite in the deposit was 0.026 pounds per cubic yard greater than that mined at Bear Valley, Jeff Jones had earlier testified the Bear Valley deposit contained five times the amount of euxenite occurring on the Payette placers as computed from the best assay (drill hole No. 15). Compare Tr. 223 with Tr. 183. This question is more fully explored subsequently in the text of this opinion.

for 20 percent of the contained ThO_2, and $0.001 per cubic yard for the contained yttrium. See Exh. C-1 at 10. The following exchange, however, occurred during cross-examination:

> Q. [By Mr. Benson] Was the euxenite marketable as of August, 1972?
>
> A. No, sir, it was not.
>
> Q. Then euxenite itself not being marketable, will you tell me whether or not the columbium components of it could have been economically removed and marketed separately, if you know?
>
> A. I don't know, sir, but I suspect it could be.
>
> Q. And the thorium dioxide, was that removable and marketable separately at a profit in 1972?
>
> A. I don't know, sir.
>
> Q. Was the yttrium content removable and separately marketable as a component in 1972?
>
> A. I don't know, sir.
>
> Q. Nevertheless, you have assigned a value, have you not?
>
> A. Yes, sir.

(Tr. 248-49.)

Insofar as mining costs were concerned, the Guy Jones report had calculated dredging costs based on a dredge used by Yuba Goldfield, known as the Lisa, which had a digging depth, below water, of 170 feet. This dredge had an original cost, in 1952, of $1,109,733. Updating this cost to 1972, the report assumed a cost of $1,409,360. See Exh. C-1 at 10, Exh. C-14. When the costs of disassembling, transporting the dredge to the site, and

reassembling were added, total capital dredging costs were estimated at $2,195,600, approximately $9,695,650 less than the capital costs of the dredge as estimated by Jeff Jones. When questioned about this divergence at the hearing, Guy Jones reiterated his view that the Lisa would be adequate for contestees' purposes. He also asserted that the updated costs which he utilized for the dredge had been provided to him by Jeff Jones, though he acknowledged that he did not know whether the Lisa had been modified to increase its dredging depth to 170 feet after its initial construction (Tr. 249-50). He admitted, however, that the projected increase in cost of only 27 percent, over a period of 20 years, did not seem reasonable (Tr. 250).

In one important matter Guy Jones' testimony went beyond the conclusions espoused in his report and position paper. At the hearing, he was examined as to the existence of a discovery on the various claims. He reiterated his original conclusion that a discovery existed with respect to the 88 million cubic yard deposit covering the Good Luck No. 3 and parts of the Good Luck Nos. 2 and 4. He was then asked whether he had an opinion as to whether a prudent person would be justified in the further expenditure of time and money in the continued development of the placer claims other than the Good Luck Nos. 2, 3, and 4. He responded that "a prudent person would be justified in spending time and money and effort to develop a valuable mine" (Tr. 245). See also Tr. 238-39. This conclusion, however, was at odds with his prior declaration in the position paper that "[u]ntil on-the-ground mineral examinations are conducted on the claims, it is nearly impossible to speculate as to which claims might be contestable." Guy Jones did not attempt to identify which assays, beyond those obtained of churn drill

holes Nos. 13 and 15, he relied upon for his assessment that the other claims were supported by a discovery, nor how his recognition that "the values recovered from the nonmagnetic fraction of the black sand concentrate recovered from churn drill holes 16 and 17 indicate an impoverishment of columbium-uranium-thorium placer mineralization from the area from Mink Creek Trail crossing northward to Trail Creek" (Exh. C-1 at 11) was brought to bear on this determination.

Knoblock was recalled as the final witness for the contestees. He noted that he had, in recent years, placed advertisements nation-wide in an attempt to interest other parties in purchasing the claims, but had been unsuccessful, he believed, because of the restrictions placed on the claims because they were within the SNRA (Tr. 272).

At the conclusion of the testimony, contestees renewed their motion to dismiss the contest both on the ground that contestant had failed to present a prima facie case and on the basis that they had submitted superior evidence. Judge Child denied both motions (Tr. 289). Judge Child noted, however, that he was taking under advisement contestees' argument that the complaint was barred by the principle of res judicata since the claims had been subject to two previous litigations (Tr. 290). Further, he stated that while his present inclination was to give the position paper prepared by Guy Jones little weight, he would address contestees' motion to dismiss based on the Guy Jones' analysis in his decision. Id.

Following receipt of post-hearing briefs from the parties, Judge Child entered his decision on February 12, 1990. Initially, Judge Child dealt with the motion to dismiss the complaint on the ground that the Government should be estopped either because of an earlier proceeding conducted before BLM under the Mining Claims Rights Restoration Act of 1955, 30 U.S.C. § 621(b) (1988), or because of prior litigation in which the Forest Service sought injunctive relief to prevent Knoblock from conducting mining activities without a current operating plan approved by the Secretary of Agriculture. As noted above, these were questions which Judge Child had expressly reserved ruling on at the hearing.

In rejecting the motion to dismiss on the ground of res judicata, Judge Child noted that in neither proceeding had the validity of the claims been at issue. Thus, in the absence of any adjudication of the validity of the mining claims, there was nothing to which the doctrine of res judicata could attach. Moreover, Judge Child went on to note that, in any event:

> [V]alidity is not a static issue to be established once, and forever after considered to be etched in stone. The conditions which make a mining claim valid may change. * * * There may be mineral bearing soil exposed at one point of time and it may have been mined out or washed out at another. Thus a claim, though valid at one time, may be invalid at another.

(Decision at 6).

Having disposed of this issue, however, Judge Child then revisited the issue of whether or not the Government had presented sufficient

evidence to establish a prima facie case of the claims' invalidity. Though he had already expressly ruled at the hearing that a prima facie case existed with respect to all of the claims (see Tr. 208-09, 289), Judge Child reversed his prior pronouncements and held that the Government had failed to present a prima facie case of invalidity on any of the claims. In arriving at this conclusion, Judge Child first adverted to "three government generated documents, each of which established a basis for viewing these claims as containing valuable mineral deposits in satisfactory quantities," asserting that "each of these documents applied reasonable geological inference to support estimates that immense quantities of workable placer gravels were present on the claims" (Decision at 8). 23/

While noting that Jeff Jones had conducted a mineral examination of the claims, Judge Child discounted the value of the samples which Jeff Jones took. Thus, Judge Child asserted that, although Wood had advised contestant of the "unsuitability" of using bulldozer trenches to test deep placer deposits, Jeff Jones had taken his samples using a backhoe. Further, Judge Child noted that, what he termed, "[t]hose unsatisfactorily obtained samples" were then submitted to a Bureau of Mines laboratory which failed to assay the samples for gold or platinum and that the San Francisco laboratory to which the samples were then sent failed to "maintain the integrity of the samples and came up with a single assay for the entire mass." From this, Judge Child concluded that "[t]he mineral value opinions of J.J. Jones were therefore speculative and afforded little credibility" (Decision at 8).

23/ The documents to which Judge Child referred were Geological Survey Bulletin 1319-D (which can be found in Exhibit G-7), the Wood report (Exh. C-4), and the Guy Jones report (Exh. C-1).

Additionally, Judge Child asserted that Jeff Jones had assumed the existence of "far too little material," thereby inflating the cost per cubic yard for mining and, further, that Jeff Jones had erred in assuming no value for euxenite. Id. With respect to this latter point, Judge Child affirmatively found that "there was a market for [euxenite] prior to 1972 and there has been since" (Decision at 9). Judge Child concluded his analysis on the prima facie case issue by opining:

> [W]here the government has self generated documents in its possession which indicate a strong likelihood of a valid discovery [24/] existing on the claims in question, it must, at a minimum, overcome the basis of those documents by discrediting them or producing equal and contrary data in order to meet its burden of making a prima facie case of no valid discovery.

(Decision at 9).

Even though Judge Child viewed his ruling on the failure of the Government to provide a prima face case of invalidity as dispositive of the contest, he nevertheless examined whether contestees had met their burden of establishing the existence of a discovery within the limits of each claim so as to obviate the need for a remand if his determination on the lack of a prima facie case were reversed on appeal. In this regard, he noted that Knoblock had testified that, because of the nature of the deposits, he did not possess the necessary financial resources to personally

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24/ The term "valid discovery," which was used not only in Judge Child's decision but in the contest complaint, itself, is a misnomer. The existence of a discovery will determine whether or not a claim is valid. In this sense, any "discovery" is "valid."

develop them though he had advertised the claims in an attempt to interest other parties. Judge Child also referenced Guy Jones' testimony that the deposit on the Payette placers contained more euxenite than that found on the Bear Valley claims which had been successfully mined until 1959. Noting that Guy Jones had asserted that all of the claims were supported by a discovery, Judge Child declared that he gave this testimony "considerable credence." Based on the foregoing, he concluded that contestees had affirmatively shown that each of the subject claims were supported by a discovery of a valuable mineral deposit.

On appeal to this Board, the Forest Service generally assails the entire analysis below. 25/ Thus, it notes that, contrary to Judge Child's assertion, the Wood report did not find that a discovery existed on any of the claims but only that "[i]t is an especially attractive prospective source of some important metals which could make an important contribution to the protection and development of our nation as well as contribute to its economy" (Exh. C-4 at 6). Indeed, Wood had expressly advised that "[f]urther testing of the ground should be done," noting that "at the present time [its] value is prospective." Id. Further, appellant asserts that, at best, the Guy Jones report only weakly supports the validity of the Good Luck Nos. 2, 3, and 4, and that there is absolutely nothing in that report or in the associated position paper which purports to find that

25/ We must observe that some of appellant's statements in its appellate brief border on the intemperate. While we can understand that counsel has strong feelings in this matter, we wish to expressly caution against the use of language which might be construed as personally denigrating to opposing parties, the Administrative Law Judge, or this Board.

a discovery exists on any of the other claims. Contestees, for their part, generally support Judge Child's decision, though they once again argue that the proceeding should be barred by the doctrine of res judicata.

[1] As an initial matter, we must agree with Judge Child that there simply exists no basis for dismissing the contest under the doctrine of res judicata. In this regard, we note that, until patent issues, paramount title to the land embraced within mining claims remains in the United States, and it may inquire into the extent and validity of rights claimed against it. Best v. Humboldt Placer Mining Co., 371 U.S. 334 (1963); Cameron v. United States, 252 U.S. 450 (1920); Ideal Basic Industries, Inc. v. Morton, 542 F.2d 1364, 1367-68 (9th Cir. 1976); United States v. White, 118 IBLA 266, 308-10, 98 I.D. 129, 151-52 (1991). Thus, even had the United States formally determined in the course of an earlier contest proceeding that a specific claim was supported by the existence of a discovery of a valuable mineral deposit, this determination would not bar a subsequent inquiry as to whether the claim continued to be supported by a discovery or whether some other deficiency existed which would justify a declaration of invalidity.

In point of fact, however, neither of the earlier proceedings even purported to examine the validity of the claims at issue. A prerequisite for the invocation of res judicata is, of course, the prior determination of a matter under dispute. Herein, there is absolutely no basis for recourse to this doctrine as there has been no prior determination that the claims were valid.

Thus, the Department's adjudication in United States v. Davis, supra, did not involve an inquiry into the existence of a discovery of a valuable mineral deposit but was limited to a determination under 30 U.S.C. § 621(b) (1988) whether or not placer mining operations would substantially interfere with other uses of the land included within the claims. See Jack T. Kelly, 113 IBLA 280, 295-96 (1990); see generally United States Forest Service v. Milender, 104 IBLA 207, 95 I.D. 155 (1988). And even this limited inquiry did not occur, since the parties to that proceeding entered into a stipulation permitting placer operations under specified conditions. See Exhs. C-11 and C-12. Similarly, nothing in the decision of the United States District Court in United States v. Knoblock, supra, purported to examine the existence of a discovery. Rather, that decision merely required contestees to limit their activities to such actions as were specifically approved by the Secretary of Agriculture or his delegate. See Exh. C-10. There is, in short, simply no foundation, whatsoever, for invocation of the doctrine of res judicata herein to bar examination of the question of whether the claims are supported by a discovery either now or in 1972.

[2] We turn now to the substantive issues presented by this appeal. Before embarking upon our analysis of these questions, we believe it is useful to set forth a brief outline of the legal principles which guide Departmental adjudications of mining claims.

As has been noted innumerable times, the sine qua non of a valid mining claim is the exposure of a valuable mineral deposit within the limits of the claim, i.e., a discovery. See, e.g., United States v. Feezor, 130 IBLA 146,

190 (1994); United States v. Copple, 81 IBLA 109, 118 (1984). The basic standard of discovery under the mining laws was set forth a century ago in the seminal decision, Castle v. Womble, 19 L.D. 455 (1894). Therein, it was declared that a discovery could be said to exist "where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine." Id. at 457. This standard, known as the "prudent man" test has, over the years, been refined to encompass a showing that the mineral disclosed is "presently marketable at a profit," which simply means that the mining claimant "must show as a present fact, considering historic price and cost factors and assuming that they will continue, there is a reasonable likelihood of success that a paying mine can be developed." In re Pacific Coast Molybdenum, 75 IBLA 16, 29, 90 I.D. 352, 360 (1983). See also United States v. White, supra at 311, 98 I.D. at 152-53; United States v. New York Mines, Inc., 105 IBLA 171, 182, 95 I.D. 223, 229 (1988).

[3] There is, moreover, a distinction between the quantum of evidence which would be sufficient to justify a prudent individual in the continuation of an active search for a mineral deposit of sufficient quantity and value to warrant development and that evidence which is, itself, adequate to justify the commencement of actual development of a productive mine with a reasonable prospect of success. Only the latter showing is sufficient to warrant a finding that a discovery under the mining laws exists. See generally Converse v. Udall, 399 F.2d 616, 620-21 (9th Cir. 1968), cert. denied, 393 U.S. 1025 (1969); Multiple Use, Inc. v. Morton, 353 F. Supp.

184, 193 (D. Ariz. 1972), aff'd, 504 F.2d 448 (9th Cir. 1974); United States v. Feezor, supra at 208-10; United States v. White, supra at 319-21, 98 I.D. at 157-58.

[4] Since a valid mining claim is "property in the fullest sense of the word" (Forbes v. Gracey, 94 U.S. 762, 767 (1876)), due process requires that a claimant receive notice and an opportunity for a hearing prior to any determination that a claim is not supported by a discovery. See Bruce W. Crawford, 86 IBLA 350, 376, 92 I.D. 208, 222 (1985). In such proceedings, however, while the United States has assumed the burden of going forward with sufficient evidence to establish a prima facie case of invalidity, it is the claimant who is the actual proponent of the rule that the claim is valid and it is the claimant who ultimately must bear the burden of persuasion. See Lara v. Secretary of the Interior, 820 F.2d 1535, 1540 (9th Cir. 1987); Southern Utah Wilderness Alliance, 125 IBLA 175, 188 n.7, 100 I.D. 15, 22 n.7 (1993). Thus, once it has been determined that the Government has presented a prima facie case that a claim is invalid, the burden of overcoming this showing by a preponderance of the evidence "irrevocably shifts to the claimant." United States v. Aiken Builders Products (On Reconsideration), 102 IBLA 70, 80 (1988) (concurring opinion). See also United States v. Springer, 491 F.2d 239, 242 (9th Cir. 1974), cert. denied, 419 U.S. 834 (1974); Foster v. Seaton, 271 F.2d 836, 838 (D.C. Cir. 1959).

A finding that the Government has presented a prima facie case merely means that evidence provided by the Government in its case-in-chief "is

completely adequate to support the Government's contest of the claim and that no further proof is needed to nullify the claim." United States v. Bunkowski, 5 IBLA 102, 119, 79 I.D. 43, 51 (1972). If the evidence presented by the Government provides a sufficient basis upon which to invalidate a mining claim on any ground, the burden devolves to the mining claimant to overcome that showing by a preponderance of the evidence.

It is, of course, axiomatic that the determination of whether or not the Government has presented a prima facie case is necessarily limited to the evidence presented by the Government in its case-in-chief. See United States v. Aiken Builders Products (On Reconsideration), supra; United States v. Copple, supra at 120. In other words, if, upon the completion of the Government's presentation, the evidence is such that, were it to remain unrebutted, a finding of invalidity would properly issue, a prima facie case has been established and the burden of proof devolves upon the claimant to overcome this showing. Where a claimant subsequently submits compelling and probative evidence which negates the conclusion of invalidity which arose from the Government's evidentiary submissions, the effect of this evidence is not to vitiate the existence of the prima facie case but rather to overcome the prima facie case. The result, of course, may well be the same, i.e., dismissal of the contest, but the distinction between the failure of the Government to present a prima facie case and the success of a claimant in overcoming such a showing is nonetheless critical to the proper adjudication of mining contests. Indeed, our analysis of the instant appeal convinces us that it was precisely this distinction which was lost below and which directly led to Judge Child's determination that the Government had failed to present a prima facie case.

In our summary of the hearing record, we set forth Judge Child's original ruling, entered when the Government had completed its case-in-chief, on contestees' motion to dismiss the contest for failure to establish a prima facie case. Therein, with reference to the Good Luck Nos. 2, 3, and 4 mining claims, Judge Child declared:

> I would have to rule between the weight to be given Mr. James Jones' testimony as to 2, 3 and 4 and the weight to be given the testimony on 2, 3 and 4 by Mr. Guy Jones, who I have yet to hear from, and I probably will hear * * * [a]nd if there were no adverse testimony there would be a prima facie case.

Judge Child continued: "I'm therefore going to deny that motion because I'm going to have to weigh that testimony" (Tr. 208-09). It is clear that, at least during the hearing, Judge Child erroneously viewed the question of the existence of a prima facie case as one dependent upon the review of the totality of the evidence adduced rather than, as we have explained above, an issue which must be determined solely on the basis of the testimony rendered and submissions made during the Government's case-in-chief. Indeed, considering his declaration that "if there were no adverse testimony there would be a prima facie case," no other interpretation is possible.

It is true that, at the hearing, Judge Child ruled that a prima facie case had, in fact, been presented and, therefore, it might be argued that the misapprehension as to the requirements of the law manifested in the above-quoted passage from the transcript did not fatally compromise his written analysis. It is, however, apparent from his written decision that Judge Child based both his rejection of Jeff Jones' volumetric estimates

as well as his criticism of Jeff Jones' failure to accord any value for euxenite, critical elements in his ultimate denigration of Jeff Jones' testimony, on the testimonial evidence provided by Guy Jones. Since Guy Jones' testimony was elicited by contestees in the course of presenting their case, consideration of this testimony in the confines of a determination as to the existence of a prima facie case was clear error.

Moreover, not only did Judge Child rely on evidence not properly considered in adjudicating the existence of a prima facie case, he also seemingly devised a heightened standard for establishing it. Thus, he declared that "where the government has self generated documents in its possession which indicate a strong likelihood of a valid discovery existing on the claims in question, it must, at a minimum, overcome the basis of those documents by discrediting them or producing equal and contrary data in order to meet its burden of making a prima facie case of no valid discovery" (Decision at 9). This reformulation of the standard for determining the existence of a prima facie case must be rejected for a number of reasons.

As we have stressed above, determination of the existence of a prima facie case is necessarily limited to the confines of the Government's case-in-chief. This includes, of course, testimony elicited in cross-examination. Where a contestee, as in the instant case, cross-examines a Government witness as to contrary conclusions reached in prior Government examinations of a claim, both the witness' response and the substance of the prior report, <u>if admitted into evidence</u>, are properly

weighed in adjudicating whether or not a prima facie case has been established. To the extent that the fact-finder determines that the effect of cross-examination has been to effectively undermine any weight which might have been accorded the witness' direct testimony, the fact-finder could properly conclude that the Government has failed in its obligation to establish a prima facie case.

This is not the same thing, however, as positing an affirmative obligation on the part of the Government, based simply on the existence of an arguably contrary Government analysis, to rebut this analysis as a pre-condition of establishing a prima facie case. While we have, in the past, suggested that such reports ought to be provided to a claimant (see United States v. Copple, supra at 121), we have never intimated that the Government was required to introduce these documents in its case-in-chief. And, absent such a positive obligation, there can be no requirement that the Government affirmatively negate such reports since, as has been noted, "a mineral report, just like any other internal BLM report, has no independent evidentiary weight nor is it probative as to any issue of law or fact 'until such time as the pertinent facts are admitted by the applicant or the report is admitted as evidence at a hearing initiated by a contest complaint.'" United States v. Aiken Builders Products (On Reconsideration), supra at 83 (concurring opinion), citing John B. Coghill, 29 IBLA 177, 181 (1977), and Don E. Jonz, 5 IBLA 204, 207 (1972). As that opinion continued, "[U]nless the report is subsequently admitted into evidence, it has no relevancy whatsoever to the contest proceedings, and, indeed, is not even part of the record upon which the determination of the claim's validity will be made."

Id. This being the case, there can simply be no affirmative obligation that the Government rebut other Government reports as a precondition to the establishment of a prima facie case.

In any event, it is almost impossible to ascertain how Judge Child could support a finding that the Government failed to establish a prima facie case of invalidity with respect to the claims other than the Good Luck Nos. 2, 3, and 4. Certainly nothing in the Wood report or the Guy Jones report or position paper undermined Jeff Jones' assertion that the claims located downstream 26/ were not supported by a discovery. On the contrary, the Guy Jones report had expressly noted that the values recovered indicated "an impoverishment of columbium-uranium-thorium placer mineralization" as one proceeded northward (Exh. C-1 at 11), while the position paper observed that "[u]ntil on-the-ground mineral examinations are conducted on the claims, it is nearly impossible to speculate as to which claims might be contestable."

In fact, examination of Table II attached to the Guy Jones report shows that the values which Guy Jones calculated based on the results of the churn drill holes other than Nos. 13 and 15, were, in every instance but one, below his calculated cost of production, i.e., $0.2201 per cubic

26/ The northernmost claim is the Good Luck No. 000. From its southern endline, the claims continue upstream along the South Fork Payette River in the following general order, though there is some overlapping: Good Luck 00, Baron Creek No. 1, Good Luck No. 0 (generally adjacent to the Baron Creek No. 1), Baron Creek No. 2, Good Luck No. 1 (generally adjacent to the Baron Creek No. 2), Goat Creek No. 1, Good Luck No. 2, Good Luck No. 3, Good Luck No. 4, and Good Luck No. 5. While the Good Luck No. 5 is actually located upstream from the Good Luck Nos. 2, 3, and 4, no churn drill holes were located within the limits of that claim.

yard. 27/ The sole exception was drill hole No. 17, located on the Good Luck No. 1, to which he ascribed a value of $0.227 per cubic yard. However, $0.12 of this value was premised on ThO_2, which, as we noted above, Guy Jones subsequently devalued by 80 percent with respect to the values obtained from drill holes Nos. 13 and 15, because of the lack of a market for the thorium. 28/ A similar deduction for the value from drill hole No. 17, would lower its value far below the costs of production. Thus, the calculations contained in the Guy Jones' report, itself, support the Government's assertion that no discovery existed on any of these claims.

[5] Finally, even ignoring the manifest problems we have already delineated with Judge Child's prima facie case analysis, there is an additional infirmity with his finding that no prima facie case had been presented. This Board has held, on numerous occasions, that uncontradicted evidence of the absence of production from a mining claim for an extended period of time is sufficient, without more, to establish a prima facie case of invalidity. See, e.g., United States v. Zweifel, 508 F.2d 1150, 1156 n.5

27/ The values computed by Guy Jones ranged from $0.014 per cubic yard for drill hole No. 11 up to $0.227 for drill hole No. 17. Only two of the drill holes, Nos. 16 and 17, had values above $0.11 per cubic yard. See Exh. C-1, Table II.

28/ The problem with the thorium market was described in Mineral Facts and Problems, 1985, "Thorium," J. Hedrick, Bureau of Mines Bulletin 675 at page 842:

"Thorium is recovered as a byproduct of processing monazite for the lanthanides and yttrium (rare earths), and monazite is recovered as a byproduct of minerals sands mined for titanium and zirconium and from tin mining. Therefore, monazite production does not reflect world demand for thorium. As a result of the large demand for rare earths, a large overcapacity exits for thorium, although its content in the ore is about one-tenth that of the rare earths."

(10th Cir. 1975); United States v. Hooker, 48 IBLA 22, 31 (1980); United States v. Hess, 46 IBLA 1, 7-9 (1980). This rule reflects the principle that, given the varying economic conditions present over a period of many years, a mining claim will usually be developed unless it is not commercially feasible to do so profitably. United States v. Alaska Limestone Corp., 66 IBLA 316, 320 (1982). In other words, the best evidence of what a prudent man would do is what a prudent man has done.

Herein, Knoblock, called as an adverse witness by the Government, testified that he acquired the claims around 1963 and that, since that time, there has been no production from the claims (Tr. 15). Claimants' failure to market any minerals from the claim since 1963 raises the presumption that they were not marketable at a profit during this time, and this presumption was buttressed by Knoblock's additional testimony that plans to develop the claims by Sim had been abandoned because Sim had asserted that he was unable to verify the existence of a discovery. Knoblock's testimony, while clearly not preclusive of an ultimate finding that the claims were supported by a discovery, was nevertheless sufficient in itself to establish a prima facie case of invalidity and to put claimants to their proof.

In light of all of the foregoing reasons, our de novo review of the record convinces us that the Government clearly established a prima facie case of invalidity with respect to all of the claims. Judge Child's conclusion to the contrary is hereby reversed.

Ultimately, however, the question to be resolved in this appeal is whether contestees have preponderated in showing that all or any of the

claims at issue were supported by a discovery of a valuable mineral deposit as of the date of withdrawal. 29/ Judge Child concluded that contestees had preponderated with respect to every claim. We turn now to this question.

Just as we have indicated in our analysis of the prima facie case question, we believe it advantageous to bifurcate the claims into two separate groups for purposes of analyzing the record as it relates to the question of discovery. The first group consists of the Good Luck Nos. 2, 3, and 4 placer mining claims. The deposit delineated on these three claims by Guy Jones was the focal point of much of the analysis submitted below and the assays from churn drill holes Nos. 13 and 15 located therein were qualitatively superior to those obtained from the other drill holes. Clearly, if contestees are to be deemed to have preponderated on the question of discovery with respect to any of the claims, it will be with these three claims. The second group consists of the remaining claims, viz., the Goat Creek No. 1, the Baron Creek Nos. 1 and 2, and the Good Luck Nos. 0, 00, 000, 1, and 5 placer mining claims. For these claims, there is simply no gainsaying the fact that the evidence to sustain a finding of validity is substantially weaker. Indeed, as we shall show, it is virtually non-existent.

29/ While the complaint had charged both a lack of a present discovery as well as the lack of a discovery as of the date of the withdrawal for the SNRA, virtually no evidence was submitted concerning the existence of a present market. Thus, we agree with Judge Child that the only question fairly joined was whether or not a discovery existed in 1972, when the land was withdrawn from mineral entry. See, e.g., Cameron v. United States, 252 U.S. 450, 456 (1920); Clear Gravel Enterprises, Inc. v. Keil, 505 F.2d 180, 181 (9th Cir. 1974).

What, then, does the record show? Jeff Jones testified that he took various backhoe samples, none of which showed any significant values. These samples were totally discounted by Judge Child who asserted that Wood had discussed the "unsuitability" of such sampling techniques for testing deep placer deposits. In fact, however, Wood did not suggest that such samples were irrelevant; rather, he noted that they have "limited value in testing a deep placer deposit" (Exh. C-3 at 7). Guy Jones, while agreeing that the churn drill holes provided an opportunity to study the mineralogy of the deposit to a greater depth than would be possible from the backhoe samples, actually testified that "[b]ased on my experience, large bulk samples taken from backhoe trenches give better results than churn drill hole tests" (Tr. 218 (emphasis supplied)), though he did not believe that the samples taken by Jeff Jones from the backhoe pits were sufficiently large to qualify as "large bulk samples." Id.

The point of the foregoing is not that we believe that the backhoe samples were more probative of the real value of the claims than the churn drill hole results. We do not so believe. Its relevance, however, lies in the fact that, to the extent that Judge Child sought to utilize the backhoe samples to discredit Jeff Jones' analysis of the evidence bearing on the discovery question, 30/ the record simply fails to support Judge Child's

30/ That Judge Child utilized the taking of the backhoe samples to discount all of Jeff Jones' analysis is obvious. Thus, in a single paragraph in his decision, he first assailed the utility of the backhoe samples, then adverted to the problem with the assaying as it related to gold and platinum, and finally concluded that "[t]he mineral value opinions of J.J. Jones were therefore speculative and afforded little credibility" (Decision at 8 (emphasis supplied)). Even assuming that Judge Child's characterization of the efficacy of backhoe sampling was correct, this would merely justify ignoring the results of that sampling. It would not, ipso facto, justify discounting Jeff Jones' independent analysis of the results

conclusions. Moreover, we expressly reject any suggestion in Judge Child's decision that the values obtained have no probative impact on the issues under consideration. At a minimum, the results obtained from the backhoe sampling are clearly corroborative of the similar results shown in the assays of the churn drill holes other than Nos. 13 and 15.

Insofar as the claims other than the Good Luck Nos. 2, 3, and 4, are concerned, the only evidence that a discovery existed on any of these claims was the declaration by Guy Jones at the hearing that a prudent individual would be justified in the development of the other eight claims. See Tr. 238-39, 245. Guy Jones' conclusion, however, was not premised on an analysis of the assay results from churn drill holes drilled on those claims but rather arose despite those results. Thus, Guy Jones testified that "Rare Metals drilled those first 12 [holes] and they did find material, but I find that there were, especially regarding gold, and/or platinum, was not professional enough and further development would be justified" (Tr. 239). In point of fact, however, even if one added the platinum and gold values which Guy Jones ascribed to the deposit on the Good Luck Nos. 2, 3, and 4, to each of the 12 churn drill holes drilled by Rare Metals Corporation, not one of those drill holes would show values greater than Guy Jones' production costs. 31/

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fn. 30 (continued)
of the churn hole drilling. See United States v. Hooker, supra at 31 ("While the mineral examiner's ultimate conclusion of invalidity may have been rendered fatally defective because of the application of improper standards, this in no way tainted the other testimonial evidence which he gave.")

31/ Thus, in his report, Guy Jones valued gold at $0.03 per cubic yard and platinum at $0.036 per cubic yard. See Exh. C-1 at 10. If one adds these amounts to the values which Guy Jones computed for drill holes Nos. 1 through 12 (see Exh. C-1, Table II), the values range from $0.169 for churn

[6] Guy Jones, in effect, rejected all of the samples other than those obtained from churn drill holes Nos. 13 and 15 and proceeded to base his expert opinion as to whether a discovery existed on all eleven of the claims solely on the showings of these two drill holes. This conclusion, however, is clearly based on an impermissible use of geologic inference.

This Board has had numerous opportunities in the past to explore the proper uses of geologic inference. Thus, we have held that "where values have been high and relatively consistent, geologic inference can be used to infer sufficient quantity of similar quality mineralization beyond the actual exposed areas, such that a prudent man would be justified in expending labor and means with a reasonable prospect of success in developing a paying mine." United States v. Feezor, 74 IBLA 56, 79, 90 I.D. 262, 274-75 (1983). What contestees seek to do herein is not to project high values beyond the area actually exposed, rather they seek to project high values into areas which are exposed but which exposures fail to exhibit those high values. We are unaware of any prior Board precedent which has sanctioned the use of geologic inference in derogation of actual sampling results, nor can we permit such use herein.

[7] Of equal importance, to the extent that contestees seek to challenge the reliability of the other churn drill hole assays as well as Jeff

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fn. 31 (c0ntinued)
drill hole No. 1 to $0.083 for churn drill hole No. 11, all of which were well below Guy Jones' production costs of $0.2201 per cubic yard. Indeed, even if one assumed, as Guy Jones suggested, that all of the costs of the dredge would be amortized by the production from the Good Luck Nos. 2, 3, and 4 (but see United States v. Collord, 128 IBLA 266 (1994)), production costs would only decline to $0.1952 per cubic yard, still in excess of the best showing.

Jones' backhoe sampling, we are, in essence, left with eight claims which have no indications of value. Indeed, these eight claims would not even possess an exposure of a valuable mineral deposit since, absent the churn drill holes, there is no evidence that a mineral deposit exists within the limits of any of these claims, much less one of any value. 32/ Contestees, as proponents of their claims' validity, are required to show an exposure of a mineral deposit within the boundaries of each of the claims challenged. See, e.g., United States v. Feezor, 130 IBLA at 214-15; United States v. Whittaker, 95 IBLA 271, 282 (1987). In order to do so, given the facts of record herein, they must rely either on the churn drill holes or the backhoe samples located on each individual claim. To attack the efficacy of both is to simultaneously establish the invalidity of all of these claims.

Whether one utilizes the backhoe sampling or the results of the churn drill holes, it is readily apparent that contestees have failed to establish the existence of a valuable mineral deposit within the limits of any of the claims in this first grouping. As an initial matter, we note that no churn drill holes were drilled on the Good Luck Nos. 000, 00, and 5. The only assays available from these claims were those taken by Jeff Jones. Those results clearly failed to establish the existence of a valuable mineral deposit within the limits of those three claims, and, to the extent that

32/ The mere presence of gravels within the claim boundaries is insufficient, without more, to establish the existence of any locatable mineral deposit. While it might, of course, be argued that the gravel is, itself, a mineral deposit, common varieties of gravel were removed from location by section 3 of the Surface Resources Act, 69 Stat. 368, 30 U.S.C. § 611 (1988), and, in any event, there is no evidence, whatsoever, that the gravel could be mined and marketed at a profit.

those samples are discredited, there is simply no evidence of the existence of a mineral deposit within the limits of those claims. Accordingly, those claims are hereby declared null and void for want of a discovery.

The chart below provides a comparison of the estimated values by claim computed by Guy Jones (Exh. C-1, Table II) on the basis of the assays from the churn drill holes and by Jeff Jones (Exh. G-7 at 17) using the same churn drill hole results.

CLAIM NAME	CHURN DRILL #	VALUE PER CUBIC YARD*	
		Guy Jones	Jeff Jones
Good Luck No. 0	1, 16	$0.179	$0.051
Baron Creek No. 1	8	0.019	0.010
Baron Creek No. 2	2	0.053	0.041
Goat Creek No. 1	9	0.038	0.026
Good Luck No. 1	3 to 7, 17	0.115	0.065

* For those claims with multiple drill holes (Good Luck Nos. 0 and 1), the value is the weighted average value.

Inasmuch as Guy Jones calculated a cost of production of $0.1952 per cubic yard, without consideration of any capital costs for a dredge, the above chart makes it graphically clear that there is simply no evidentiary basis upon which to premise a finding that the Baron Creek Nos. 1 and 2 and the Goat Creek No. 1 placer mining claims were supported by a discovery of a valuable mineral deposit. Using the weighted average of the churn drill holes, a similar finding with respect to the Good Luck Nos. 0 and 1 placer mining claims would be warranted.

Admittedly, if one totally discards the results obtained from the holes drilled by Rare Metals Corporation, the situation with respect to the Good Luck Nos. 0 and 1 becomes less clear. Guy Jones calculated the values shown in drill hole No. 16 (located on the Good Luck No. 0) at $0.217 per cubic yard and computed the values shown in drill hole No. 17 (located on the Good Luck No. 1) at $0.227 per cubic yard. 33/ Assuming, arguendo, no capital costs for the dredge, these values would be above his average production costs ($0.1952 per cubic yard). However, as discussed above with respect to drill hole No. 17 in the context of the prima facie case issue, merely adjusting the thorium values because of its limited marketability, as the Guy Jones report did with respect to results from drill holes Nos. 13 and 15, results in a decrease of the total value for drill hole No. 17 to $0.131

33/ We note that Jeff Jones had calculated the values from the assays of these two drill holes as $0.044 per cubic yard for drill hole No. 16 and $0.099 per cubic yard for drill hole No. 17. These figures are far below the lowest estimate of production costs. The discrepancy between the evaluations by Jeff Jones and by Guy Jones are primarily related to the values which Guy Jones ascribed to drill hole No. 16 for thorium and to drill hole No. 17 for thorium and yttrium.

per cubic yard, far below the most optimum production cost estimate. A similar reduction for ThO_2 content with respect to drill hole No. 16 lowers its value to $0.187 per cubic yard, which, while closer to Guy Jones' minimum production costs, is also negative. 34/ Moreover, two-thirds of the remaining value attributed to this drill hole is based on its yttrium content and there is substantial question whether any of the value attributed to the yttrium ($9.00 per pound) could be realized. 35/

What the above analysis establishes is that, even accepting the validity of all of the assumptions contained in the Guy Jones report, there is simply no basis for concluding that a prudent individual would be justified in the further expenditure of labor and means with a reasonable prospect of success in developing any of the above claims, given the information known either in 1972 or today. A prudent individual most assuredly would not proceed to develop claims where the only evidence as to their value indicates that the cost of production exceeds the ultimate returns. And if, as alleged herein, it is assumed that the evidence as to value is faulty, a prudent individual would not simply ignore the assay results and proceed to put huge amounts of capital at risk. Rather, such an individual would first conduct or commission further testing of the deposit to ascertain

34/ While the loss of $0.0082 per cubic yard may seem small, it must be remembered that, spread over a deposit similar in size (88 million cubic feet) to that projected on the Good Luck Nos. 2, 3, and 4, the total loss would aggregate $721,600. And this is a loss which occurs even assuming no capital expenditures for a dredge must be recovered from production.

35/ The problems related to recovery of the yttrium values presupposed in the Guy Jones' report are discussed infra in relationship to the Good Luck Nos. 2, 3, and 4 mining claims.

whether his assumptions as to value are correct. 36/ Only after some objective indicia has been obtained that the value of the deposit exceeds the likely cost of production can the commencement of production be characterized as an act of prudence. No such evidence was developed prior to 1972 and none has been generated since that time. We therefore reverse the decision of Judge Child and declare the Baron Creek Nos. 1 and 2, the Goat Creek No. 1, and the Good Luck Nos. 0 and 1 placer mining claims null and void for lack of a discovery of a valuable mineral deposit.

We now turn to the second grouping of claims, the Good Luck Nos. 2, 3, and 4. As noted above, Guy Jones premised the existence of an 88 million ton deposit on the results obtained from two churn drill holes, drill hole No. 13, located near the north endline of the Good Luck No. 2, and drill hole No. 15 located in the south half of the Good Luck No. 4. In determining the value of this deposit, he weighted the averages derived from the assays for these two drill holes and projected them throughout the deposit. Not only, however, are these two drill holes located approximately 6,000 feet apart, but two other drill holes (Nos. 11 and 12) are located between them on the Good Luck No. 3, and a third drill hole (No. 10) is located approximately 750 feet northwest of drill hole No. 13. See Exh. G-8. The values which Guy Jones computed for these three holes

36/ In this regard, we note that Knoblock, himself, was aware of the necessity for further exploration of these claims. Thus, he noted, with reference to these claims:

"[I]f I was interested in proceeding, as I said, anybody would proceed, they're going to do a lot of testing on their own. The test holes that in there, you know, [are] just an indication that they're there. But [there] has to be a lot of testing done to go ahead" (Tr. 278).

were $0.017 per cubic yard for No. 10, $0.014 per cubic yard for No. 11, and $0.096 per cubic yard for No. 12. See Exh. C-1, Table II.

As noted earlier, Guy Jones chose to disregard these results both because of the failure to have the concentrates assayed for gold or platinum as well as the failure to have the magnetic fraction assayed at all, a failure which, as we indicated above, could negatively affect total Cb_2O_5 readings because of the possible exclusion of ilmenorutile. See discussion supra at note 21 and accompanying text. One obvious problem with Guy Jones' approach, however, is that by dismissing the results from churn drill holes Nos. 11 and 12, we are left with no assay results, at all, from the Good Luck No. 3. Since, as we have already discussed at length, any claim must, as a precondition to validity, contain an exposure of a mineral deposit, the total exclusion of the assay results from drill holes Nos. 11 and 12 would preclude a finding of validity for the Good Luck No. 3, regardless of the showings obtained from drill holes Nos. 13 and 15. Needless to say, this would effectively invalidate Guy Jones' entire analysis since the premise upon which he examined marketability was the existence of an 88-million-ton-deposit which was primarily located on the Good Luck No. 3.

Alternatively, it is possible, even assuming the correctness of Guy Jones' criticism of the assaying of drill holes Nos. 11 and 12, to adjust the values derived to account for the failure to assay for gold and platinum 37/ as well as the possible undervaluation of Cb_2O_5. Thus, one could

37/ Whether or not platinum values are properly considered even in the context of analyzing the results from drill holes Nos. 13 and 15 is a matter more fully explored subsequently in this decision.

simply add the weighted average value per cubic yard which the Guy Jones report derived from drill holes Nos. 13 and 15 ($0.03 for gold and $0.036 for platinum) to the total values derived from the assays of drill holes Nos. 11 and 12. Thus, merely increasing the derived value for those two holes by $0.066 would rectify any possible discrepancy occasioned by the failure to assay for gold and platinum.

Similarly, one could adjust the totals reported for Cb_2O_5 to account for the failure to assay the magnetic fraction of the concentrate. Based on Rupp's X-ray diffraction analysis, the total Cb_2O_5 content is composed of 33-percent euxenite, 43-percent ilmenorutile, and 24-percent columbite. In essence, therefore, assuming that the assay of the nonmagnetic fraction recovered none of the Cb_2O_5 in the form of ilmenorutile, the totals reported represented only 57 percent of the total Cb_2O_5 in the concentrate. Adjusting the reported values to reflect 100 percent of the Cb_2O_5 content results in an increase of $0.006 for drill hole No. 11 and $0.062 for drill hole No. 12.

Making both adjustments results in an attributed value per cubic yard of $0.086 for drill hole No. 11 and $0.224 for drill hole No. 12. While the latter figure is slightly above Guy Jones' costs per cubic yard of $0.2201, 38/ the total for drill hole No. 12 clearly overstates recoverable Cb_2O_5 since it now includes not only the Cb_2O_5 content of euxenite, which the Government contends is not marketable, but also includes the Cb_2O_5

38/ When considering the validity of the Good Luck Nos. 2, 3, and 4 mining claims, the capital costs of the dredge must be accounted for.

content of ilmenorutile which even Guy Jones admitted was not marketable. Moreover, the average weighted value of these two drill holes, the only ones located on the Good Luck No. 3, is only $0.171 per cubic yard. Even making yet one more adjustment, this time to account for the failure to assay the concentrates for U_3O_8, results in a total value of $0.231 per cubic yard, a figure which, while marginally above the projected development costs, still overstates the value of the contained Cb_2O_5. Thus, any analysis which is limited to determining whether or not the evidence establishes the existence of a valuable mineral deposit solely on the Good Luck No. 3 placer mining claim must conclude that this question can only be answered in the negative.

Ultimately, of course, contestees argue that a single deposit has been delineated which encompasses both the southern portion of the Good Luck No. 2 and the northern portion of the Good Luck No. 4, as well as all of the Good Luck No. 3 mining claim. Therefore, it could be argued that the proper approach for determining value would be to derive a weighted average of all of the drill holes (using the adjusted values for drill holes Nos. 11 and 12 computed above). The weighted average for Cb_2O_5 per cubic yard is 0.1495 pounds. This total is approximately 25 percent lower than the 0.20 pounds per cubic yard Cb_2O_5 upon which Guy Jones premised his value analysis. This has the result of lowering the columbite value from $0.055 to $0.041. 39/ Making a similar adjustment for the Cb_2O_5

39/ Guy Jones had computed the amount of columbite by determining that the columbite in the Payette placer deposit contained 74.37 percent Cb_2O_5. Since the amount of Cb_2O_5 in the form of columbite had been determined to be 0.036 pounds per cubic yard, the amount of columbite would be 0.048 pounds per cubic yard.

content of the euxenite, would reduce its value from $0.086 to $0.064. The above adjustments, which we believe to be absolutely required under any analysis, lowers the total value, as computed by Guy Jones, from $0.342 per cubic yard to $0.306 per cubic yard. Were this a value fairly supportable in the record, and if the projected development costs ($0.2201 per cubic yard) were also supported therein, the decision of Judge Child with respect to these three claims would be sustainable. The problem, however, is that the projected value is based on assumptions which we do not believe are supportable and, further, the projected costs clearly understate the costs which would occur.

[8] The key assumption relating to value is that the mineral values contained in the euxenite can be realized. In his decision, Judge Child rejected Jeff Jones' exclusion of euxenite values arguing that "there was a market for [euxenite] prior to 1972 and there has been since" (Decision at 9). While there is absolutely no question that euxenite was marketed by Porter Brothers until 1959, there is nothing in the record, nor has research been able to disclose anything else, which could support Judge Child's assertion that there has been a market for euxenite since 1972. On the contrary, it seems clear that the market for euxenite which existed in the late 1950's was a Government-generated market, designed to bolster domestic production of minerals, which collapsed when Government purchasing subsidies terminated.

Precisely because the Porter Brothers production of euxenite at Bear Valley was unique, it has received considerable attention in standard

minerals publications. These treatises make it clear that the production at Bear Valley in the late 1950's was not the result of market forces but of Government intervention. Thus, the 1957 Minerals Yearbook, Vol. 1, published by the Bureau of Mines, noted that domestic production of columbium-tantalum had increased 71 percent over the previous year, due principally to the higher production by Porter Brothers at its Bear Valley operation, 40/ which was purchased by the Government under a special contract. 41/ Id. at 403-04. It was further noted that the market price for foreign columbite varied between $1.40 and $1.15 per pound of contained pentoxides (assuming a Cb:Ta ratio of 10:1), whereas the Government purchase price for domestic columbium was $3.40 per pound of contained pentoxides. Id. at 406. Thus, the Government purchase price was, at a minimum, almost 150 percent above the then-existing market rate.

In 1958, new Government purchases of domestic columbium for stockpiling purposes were discontinued. As has been noted above, upon fulfillment of its existing Government contract in 1959, the Bear Valley operation shut down. By 1970, it was noted that "[t]he U.S. columbium industry has depended on imports and Government stockpile releases for all of its columbium since 1959." Mineral Facts and Problems, 1970,

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40/ All domestic production of columbium other than at Bear Valley was as a byproduct of pegmatite deposits mined for other minerals. Id.

41/ Section 303 of the Defense Production Act of 1950, 64 Stat. 798, 801, had originally authorized the purchase of critical and strategic minerals and metals at prices above currently prevailing market prices. This was expressly extended to columbium and tantalum by the Domestic Minerals Program Extension Act of 1953, 67 Stat. 417. Finally, section 2(d) of the Domestic Tungsten, Asbestos, Fluorspar and Columbium-Tantalum Production and Purchase Act of 1956, 70 Stat. 579 (often referred to as Public Law 733), authorized the purchase of up to 250,000 pounds of contained pentoxides.

"Columbium," R. Griffith, Bureauof Mines Bulletin 650 at 276. This publication also observed that while a small production of columbium-mineral concentrate was reported from South Dakota and New Mexico from 1966 through 1968, no shipments were made. Id. With reference to domestic production, the report noted that "[e]ven the most promising domestic supplies, those in Colorado and Idaho, would require that the price of columbium double to about $2.75 per pound of contained columbium before production would be economically attractive." Id. at 287.

Fifteen years later, this outlook had not changed. Thus, in Mineral Facts and Problems, 1985, "Columbium," L. Cunningham, Bureau of Mines Bulletin 675, it was noted that "[t]he United States has not produced any significant quantities of columbium raw materials for years." Id. at 186. In explanation of this fact, the report noted that "[d]omestic columbium deposits are low in grade and considered uneconomic to mine." Id. at 185. Table 6 of the report disclosed virtually no domestic production of columbium minerals in any form from 1973 to 1983. 42/ While the United States continued to be a major processor of columbium feedstock into columbium end products, the raw materials processed were pyrochlore and columbite. Id. at 187. There was no indication that euxenite was being marketed anyplace in the United States.

42/ The table indicated that for the years 1980, 1981, and 1982, a small unreported quantity of columbium minerals was produced. As noted in the text, there is absolutely no evidence that such minor production as did occur was in the form of euxenite. Indeed, since there is no question that the Bear Valley deposit has never been reactivated, it is a virtual certainty that even this limited production of Cb_2O_5 was not from euxenite. No domestic production of columbium or tantalum was reported for 1987 or 1988. See 1987 Minerals Yearbook, Vol. 1, at 281; 1988 Minerals Yearbook, Vol. 1, at 301.

In short, we can find nothing which supports Judge Child's assertion that a market for euxenite has existed since 1972. Instead, what is disclosed is the existence of a Government-spawned market for euxenite in the late 1950's, which market evaporated when the Government ceased to pay a premium price for Cb_2O_5. In our decision in In re Pacific Coast Molybdenum, supra, which Judge Child cited in support of his determination that the absence of a market for euxenite in 1972 was not preclusive of a determination that euxenite was marketable, we differentiated between normal market fluctuations and fundamental structural changes which "invalidate historical conditions as a guide to present marketability." Id. at 30, 90 I.D. at 360. With respect to the latter, we adverted to the situation adjudicated in United States v. Denison, 76 I.D. 233 (1969), where "cessation of a Government stockpiling program which had greatly elevated manganese prices, served to render these past prices irrelevant to the question of present marketability." Id. While the Board recognized that "[i]t was, of course, not beyond the realm of possibility that a future stockpiling program might some day be initiated," we noted that "[s]uch a possibility * * * was essentially speculative and could not serve as a predicate upon which a prudent man would have proceeded to expend time and money with a reasonable hope of success." Id. (emphasis in original).

The concerns to which we had reference in In re Pacific Coast Molybdenum clearly resonate in the facts surrounding production of euxenite in 1959. Production at Bear Valley commenced under a Government contract which provided for payments far in excess of market values. Production

continued only until the Government buying program ended and the Government contract was filled. At that point, production ceased and has never been resumed, despite the fact, as has been noted, that a 30-year supply remained at the Bear Valley site. Contestees' implicit suggestion that, because Porter Brothers was able to find a market for the euxenite produced from Bear Valley in the late 1950's, it should be presumed that they could find a market for the euxenite from the Payette placers in 1972 or today is only valid to the extent that one assumes that a Government buying program, similar to that in existence in the late 1950's, would come into existence and result in an offer to purchase the Cb_2O_5 content of the euxenite from the Payette placers at a price far above the market rate. This is precisely the type of speculative possibility that, we cautioned, would not induce a prudent individual to expend further time and money with a reasonable prospect of developing a paying mine.

We recognize that Guy Jones testified that the amount of euxenite per cubic yard found on the Payette placers (0.156 pounds per cubic yard) was greater than that which was successfully mined at Bear Valley (0.130 pounds per cubic yard). See Tr. 222-23; Exh. C-1 at 8. Judge Child alluded to this testimony in his decision. See Decision at 10. If this were true, it might be argued that the fact that Porter Brothers ceased operations at Bear Valley after the completion of the Government contract in 1959 did not necessarily establish that the richer deposit found on the Payette placers

could not be successfully exploited. The fact of the matter, however, is that Guy Jones was in error.

Guy Jones provided no basis for his assertion that the Bear Valley deposit contained 0.130 pounds of euxenite per cubic yard. Jeff Jones, in his report, had asserted that "[a]t the Bear Valley property euxenite averaged 1 pound per cu. yd." (Exh. G-7 at 18). Jeff Jones also failed to provide any source for his information. Published sources, however, corroborate Jeff Jones' contentions on this point. Thus, United States Mineral Resources, Geological Survey Professional Paper 820 (1973), contains a detailed discussion of the Bear Valley deposit in its chapter entitled "Niobium (Columbium) and Tantalum," which we set forth here:

> The most important placer deposit of niobium and tantalum known in the United States is at Bear Valley, Valley County, Idaho. The placer was mined from 1955 through 1959 by two dredges with a combined capacity of 8,000 cubic yards per day, and during the period of operation 1,050,000 pounds of combined niobium and tantalum oxide was produced from the euxenite and subordinate columbite recovered from the deposit. It has been estimated that there is sufficient unmined ground to permit 30 years' mining at the same rate of operation.
>
> The placer area is in a glaciated valley in the granitic rocks of the Idaho batholith; the richest placers, which have been partially mined, are in the upper part of the valley where the source of the valuable minerals is thought to be a 6-square-mile area of quartz diorite and associated pegmatites. The euxenite content of the quartz diorite is very irregular and may range from a trace to 0.05 pound per cubic yard; this has been enriched to about 1 pound per cubic yard in the placers, where the euxenite is accompanied by a large suite of other heavy minerals, some of which, with their estimated tenor in pounds per cubic yard, are as follows: Columbite (0.2), ilmenite (20), magnetite (5), zircon (0.05), garnet (5), and monazite (0.5).

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United States Mineral Resources (1973), "Niobium (Columbium) and Tantalum," R. Parker and J. Adams, Geological Survey Professional Paper 820 at 449 (emphasis supplied, citations omitted). 43/

From the foregoing it can be seen that Jeff Jones was correct in his assertion that the euxenite content of the Bear Valley deposit was approximately six times higher than that indicated by churn drill holes Nos. 13 and 15 for the Payette placer deposit. Moreover, both the monazite and the columbite content were more than four times greater in the Bear Valley deposit than the Payette placers. 44/ Guy Jones' contention that the instant deposit was of higher quality than that mined at Bear Valley is simply unsupportable.

We find, therefore, no realistic expectation either in 1972 or at the time of the hearing that a market would soon exist for domestic euxenite deposits, particularly the deposit at issue herein. It follows that Jeff Jones was correct in disregarding that part of the Cb_2O_5 content which was contained in the euxenite since there was no indication that it could profitably be recovered and, indeed, the absence of an existing market for euxenite, given the history of the Bear Valley deposit, was affirmative evidence that it could not be recovered at a profit.

43/ This publication, as well as the various editions of Mineral Facts and Problems, are standard reference works of which official notice may be taken pursuant to 43 CFR 4.24(b). See United States v. Aiken Builders Products (On Reconsideration), supra at 78-79 & n.3 (concurring opinion).

44/ Guy Jones had computed the columbite content of the Payette placer deposit at 0.048 pounds per cubic yard and the monazite content at 0.1176 pounds per cubic yard. See Exh. C-1 at 8, 9.

Guy Jones had also allocated $0.061 in value to the yttrium content of the deposit. Of this, $0.001 was for the yttrium content of the euxenite. In the absence of a market for euxenite, however, there is no reasonable expectation that the yttrium contained therein could be economically processed. More critically, to the extent that Guy Jones ascribed a value of $0.06 for yttrium contained in monazite, we must agree with Jeff Jones that there is minimal evidence of record that a prudent individual would reasonably believe that any of this value could be realized from this deposit.

As an initial matter, we must point out that the only churn drill hole which was assayed for yttrium was No. 16, which was not located on any of the three claims being analyzed. Thus, all assumptions as to yttrium values are based on projections from outside the area being analyzed. This factor, in and of itself, substantially undermines the reliability of Guy Jones' calculations as to the yttrium values which might be derived from processing the deposit on the Good Luck Nos. 2, 3, and 4 mining claims. This, however, is not the only problem with the values ascribed to the yttrium content in the Guy Jones report.

In his mineral report, Jeff Jones, after quoting from Bureau of Mines publications that "[b]ecause of relatively large surplus stocks held by rare earth processors, domestic production of yttrium compounds and metal continued to be less than 50% of estimated capacity," suggested that there was probably no demand for the Y_2O_3 present in either the euxenite or monazite found in the Payette placers. Various professional publications bear this out.

The essential problem is that, as was noted in Mineral Facts and Problems, 1970, "Yttrium," J. Stamper and E. Chin, Bureau of Mines Bulletin 650, "Yttrium is always produced as a byproduct or coproduct in the mining and processing of other elements." Id. at 798-99. While monazite was at one time the principle domestic source for rare earths and yttrium, since the discovery of bastnasite deposits in California, rare earth production from domestic monazite has declined. 45/ Though monazite recovered from beach sand deposits in the southeastern United States remains the principal source of domestic yttrium, this monazite is processed as a byproduct of titanium and zirconium minerals, which renders "monazite's additional separation costs * * * minimal relative to the entire operation." Mineral Facts and Problems, 1985, "Rare-Earth Elements and Yttrium," J. Hedrick, Bureau of Mines Bulletin 675 at 659. Since, as shown above, there has been no market for euxenite since 1959, the cost savings which result from monazite's byproduct status would not be available with respect to the instant claims. Given that the Bear Valley deposit contained almost four times more monazite and already had, in place, the infrastructure which contestees would be required to build to successfully mine their deposit, yet

45/ Part of this decline was attributable to the fact that the market for thorium, which was produced as a byproduct of monazite processing, itself declined when the Atomic Energy Commission ceased thorium purchases in the 1960's. Large surpluses of thorium now exist in both domestic and foreign markets. See Mineral Facts and Problems, 1985, "Thorium," J. Hedrick, Bureau of Mines Bulletin 675 at 840. Indeed, today, the presence of thorium in monazite deposits is viewed as a negative factor since the storage and disposal costs of the byproduct thorium has resulted in increased costs in recovering rare earths from monazite. See Mineral Facts and Problems, 1985, "Rare-Earth Elements and Yttrium," J. Hedrick, Bureau of Mines Bulletin 675 at 661. Thus, the assumption that the thorium content of the Payette placers will provide any positive benefits is certainly open to serious question. See also note 28, supra.

all production at Bear Valley ceased when the demand for euxenite disappeared, there seems little, if any, likelihood that the Payette placer claims could be successfully mined for monazite. 46/

Exclusion of the values ascribed to yttrium and to the Cb_2O_5 content of euxenite results in costs of mining exceeding the value of production, even assuming total recovery of gold, platinum, columbite, and uranium, and the marketability of 20 percent of the ThO_2. And, as we have noted, there are significant questions as to the marketability of any of the thorium and whether or not the uranium could be economically extracted from the euxenite in the absence of a market for that mineral. Additionally, we note that there is also a very real question as to the reliability of the assays of churn drill holes Nos. 13 and 15, as they relate to platinum, since independent analysis of the concentrate by the Bureau of Mines and Geological Survey failed to disclose the presence of platinum. There appears little question that, even assuming the presence of minerals in the percentages projected by Guy Jones, the values which could reasonably be expected to be realized therefrom have been substantially overstated.

And, not only have contestees overstated the value of production, they have also, in at least one important area, understated the costs of production. Contestees premised their dredging costs on the 1952 price of

46/ The fact that a reputed million dollars in yttrium was recovered from the euxenite residues on the Bear Valley claims (see Exh. C-1 at 8) is, thus, beside the point. As noted in the text, the fact that yttrium could be recovered economically after the euxenite has been mined and processed (and the cost of mining has been accounted for) scarcely establishes that yttrium could be mined and processed economically for its own value.

the Lisa dredge 47/ adjusted for inflation. In computing the increase in costs from 1952 to 1972, the inflation factor used was 27 percent. When his attention was drawn to this, Guy Jones agreed that it did not seem reasonable (Tr. 250). In fact, it was clearly too low.

Figures from the Bureau of Labor Statistics indicate that between 1960 and 1972, the costs for equipment and repair parts increased approximately 47 percent. 48/ Merely assuming that inflation averaged only 1 percent a year for the preceding 8 years results in a total inflation rate of 55 percent, more than double the rate that what was actually used. This results in a total increase in cost of $310,000, or $0.0035 per cubic yard, assuming an 88 million ton deposit. While the amount per cubic yard is admittedly small, it represents yet a further decrease in the likelihood of profitability.

[9] The foregoing analysis has focussed on the substantial problems in contestees' valuation of the subject deposit. This analysis has generally assumed that specified minerals (e.g., columbium, gold, yttrium,

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47/ On the issue of dredging costs, we find ourselves in general agreement with Judge Child that the Jeff Jones report appears to have overstated the costs of an appropriate dredge. Moreover, to the extent that a single mineral deposit embraces more than one claim, recovery of capital costs may properly be prorated to all of the claims (and all of the mineral tonnage). See United States v. Collord, supra at 301-305 (concurring opinion); United States v. New York Mines, Inc., supra at 191, 95 I.D. at 234-35 (1988). It was error for Jeff Jones to limit the recovery of capital costs to only that part of the mineral deposit located within the Good Luck No. 3.

48/ We have obtained these figures from the "Capital and Operating Cost Estimating System Handbook," prepared by Straam Engineers, Inc., for the Bureau of Mines in 1977. The relevant indices are set out at page 10 of this publication.

etc.) were present throughout the 88 million cubic-yard deposit in the percentages generally indicated in the Guy Jones report and concentrated on exploring the question whether it was reasonably likely that these mineral values could be realized. What we wish to focus on now is the inadequacy of the existing data to support any projections of mineral content with sufficient reliability to justify a determination that a discovery under the mining laws exists.

The essence of contestees' case is that the results from churn drill holes Nos. 13 and 15 (supplemented, on a selective basis, from results obtained from other drill holes) are sufficient to establish the existence of an 88 million cubic-yard mineral deposit of such value that an individual of ordinary prudence would be justified in proceeding to commence development of a mine with a reasonable likelihood of success. Indeed, to the extent that contestees rely solely on these two holes as validating all of their locations, they contend that these two drill holes are enough to establish the existence of a valuable mineral deposit containing in excess of 200 million cubic yards, extending over 5 miles in length. Yet, the fact of the matter is that contestees' own evidence, far from establishing the existence of a discovery as that expression is understood in the mining laws, actually clearly shows that contestees, at best, are still in the early stages of exploration to determine <u>if</u> sufficient mineralization exists within any of these claims to warrant the substantial expenditures which development would entail.

The Wood report explored, in some detail, the status of exploration activities on the Payette placers. The Wood report noted that random location of drill holes is normally as good a method as any for "initial drilling" since, if any of those holes show value, they indicate the areas where systematic sampling should be conducted. With respect to the Payette placers, Wood noted that, since there seemed to be a great disparity in values among the holes already drilled, "serious consideration has to be given to determining if some indicated values exist or if they do not exist" (Exh. C-4 at 7). Accordingly, he recommended the drilling of two holes offsetting drill holes Nos. 13 and 15 to determine which set of results were accurate, "the good or the bad." Id. at 8. He noted that "[t]he drilling of these two holes would be the minimum needed to confirm the presence of values in those areas." Id. No such drilling ever occurred.

Knoblock, himself, was well aware of the need for more testing of the claims. Thus, in his testimony, he observed that

> if I was interested in proceeding, as I said, anybody would proceed, they're going to do a lot of testing on their own. The test holes that are in there, you know, just an indication that they're there. But [there] has to be a lot of testing done to go ahead

(Tr. 278).

As this Board has often noted, there is a fundamental difference between evidence which would justify a prudent individual in the continued

exploration of a prospect and that which would justify the commencement of work to develop that prospect into a paying mine. See, e.g., United States v. Feezor, 130 IBLA at 208; United States v. White, supra at 319-20, 98 I.D. at 157-58. Certainly, the assays from drill holes Nos. 13 and 15 provide indications of possible values which might be deemed sufficient to justify the expense and effort of drilling additional holes in an effort to corroborate the existence of a valuable mineral deposit. But that is a long way from suggesting that the evidence from these two drill holes would be sufficient to convince a person of ordinary prudence that literally millions of dollars could reasonably be committed to developing these claims, particularly where, as here, other drill holes have disclosed only a fraction of the values obtained from drill holes Nos. 13 and 15.

It may be, as the Guy Jones and Wood reports suggest, that the Rare Metals sampling program was flawed in important aspects. But certainly, any prudent individual would want a stronger foundation than a mere supposition before committing substantial amounts of capital to the development of a mine on this property. What such an individual would require is hard evidence that the values obtained from drill holes Nos. 13 and 15 are, indeed, values fairly representative of the entire deposit. Only then would such an individual even bother to examine the marketplace to determine whether these values might be economically recovered. Such evidence, however, neither existed in 1972, when the Government withdrew the land from further appropriation, nor in 1989, when the hearing below was conducted.

It is a truism long recognized that, despite the mandates of the law, individuals often locate mining claims at the first indication of value,

long before evidence has been collected which might justify the development of the claims. So long as a discovery ultimately occurs while the land remains open to mineral entry, the Government will not concern itself with the order in which the acts of location and discovery have transpired. See Cole v. Ralph, 252 U.S. 286 (1920). But, where the Government has determined to withdraw land from the operation of the mining laws, only such claims already containing a discovery are excepted from the force of this action, since only such claims possess rights as against the United States. Any individual who locates a claim prior to making a discovery runs the risk that the Government will withdraw the land before a discovery can be completed and put all his efforts to naught. But this is a risk no different than that assumed by those who, mindful of the statutory requirement that discovery precede location, refrain from staking a claim until such time as a discovery has been shown to exist.

In the instant case, the subject claims were located in 1957 and 1958. It was not until 14 years later that Congress saw fit to remove these lands from the operation of the mining laws. During the period between location of the claims and the withdrawal of the land from mineral entry, various drill holes were drilled on the claims. Many of these showed minimal values while a few showed values which might have justified further sampling of specific claims. Yet, in the 22 years following the drilling of holes Nos. 16 and 17 in 1967, no further drilling occurred. We recognize that there are significant costs associated with any drilling program. But those who seek to obtain rights to public lands must either find it in their own means to finance all necessary exploration activities, obtain the aid of

those financially better-equipped to do so, or run the risk that the Government will determine to withdraw the land from mineral entry and prevent the acquisition of adverse rights. In the instant case, it seems clear to us that the drilling which had occurred prior to 1972 was inadequate to delineate a valuable mineral deposit within the meaning of the mining laws. That being the case, the land within the claims was not excepted from the force of the withdrawal. Since the claims were not supported by a discovery as of 1972, and the withdrawal for the SNRA prevented the acquisition of any new rights to these lands, the conclusion is inescapable that the claims must be declared null and void.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed from is reversed and the Goat Creek No. 1, the Baron Creek Nos. 1 and 2, and the Good Luck Nos. 1, 2, 3, 4, 5, 000, 00, and 0 placer mining claims are declared null and void for lack of a discovery of a valuable mineral deposit as of August 22, 1972.

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James L. Burski
Administrative Judge

I concur in the result:

_____
John H. Kelly
Administrative Judge